Whitcher Wildlife Ltd.
Wildlife Consultants.

LAND AT BUMP HALL, PENISTONE, SITE B.

PHASE I HABITAT AND PROTECTED FAUNA SURVEY.

Ref No:- **130405/SITE B.**

Date:- **12th April 2013.**

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1. INTRODUCTION.

1.1. A planning application is to be submitted for the development of two areas of land at Bump Hall in Penistone. This report covers site B which is located to the west of Wellhouse Lane.

1.2. Whitcher Wildlife Ltd has been commissioned to carry out a Phase I Habitat and Protected Fauna Survey of the site to establish whether there are any issues that may affect the proposed works.

1.3. The site survey was carried out on 3rd April 2013 and this report outlines the findings of that survey and makes appropriate recommendations.

1.4. Appendices I to X of this report provide additional information on specific species and are designed to assist the reader to understand the contents of this report.

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2. SURVEY METHODOLOGY.

2.1. Prior to visiting the site the survey area was cross referenced to maps and aerial photographs to give a general idea of the habitats within the area and to identify potential access and walking routes.

2.2. The survey area was walked where access was agreed and public rights of way were used where no access was agreed. All habitats within and immediately around the survey area were documented and the dominant species within that habitat listed in line with the JNCC Handbook for Phase 1 Habitat surveys.

2.3. The survey area and immediate surrounding area was thoroughly searched for evidence of badger (*Meles meles*) activity by looking for the following signs in line with Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*. Mammal Society:-

* Badger setts.
* Badger latrines or dung pits.
* Badger snuffle holes and evidence of foraging.
* Badger paths.
* Badger prints in areas of soft mud.
* Badger hairs caught on fencing.

2.4. All watercourses within the survey area and for approximately 50m in each direction were thoroughly searched for evidence of water vole (*Arvicola amphibius*) activity by looking for the following signs, in line with Rob Strachan, Tom Moorhouse and Merryl Gelling (2011). *Water Vole Handbook: Third Edition*:-

* Water vole burrows.
* Water vole faeces and latrines.
* Water vole feeding stations.
* Water vole runs.
* Water vole prints in areas of soft mud.
* Water vole lawns.
* Predator field signs.

2.5. All watercourses within the survey area and for approximately 100m in each direction were thoroughly searched for evidence of otter (*Lutra lutra*) activity by looking for the following signs in line with the P Chanin (2003). *Monitoring the Otter* and *Conserving Natura 2000 Rivers: Monitoring Series No10 Guidelines:-*

* Otter prints in soft mud.
* Otter spraints.
* Otter holts.

2.6. All mature trees and derelict buildings were checked for potential bat roosting sites in line with L Hundt (2012). *Bat Conservation Trust Good Practice Guidelines* by looking for the following signs:-

* Holes, cracks or crevices.
* Bat Droppings.

2.7. The land adjacent to the survey area was assessed for bat roosting and foraging potential including connective routes and flight lines.

2.8. The area within 500m of the survey site was cross referenced to maps to highlight all ponds close to the site. Where possible the ponds were accessed using agreed access or public rights of way to assess the potential for great crested newts (*Triturus cristatus*) to be present.

2.9. All watercourses and waterbodies within the survey area and for approximately 50m in each direction were thoroughly searched for the presence of crayfish where safe to enter the water. The survey was carried out in accordance with the *Conserving Natura 2000 Rivers Monitoring Series No 1, Protocol for Monitoring the White Clawed Crayfish.*

2.10. The survey area was thoroughly searched for the presence of reptiles or suitable reptile habitats.

2.11. All surveys were carried out in line with the Institute of Ecological and Environmental Management (IEEM) survey standards and advice.

2.12. This survey was carried by James Campbell. Since 2003 James has had experience in a professional capacity as a Wildlife Consultant carrying out Ecology Surveys and Phase 1 Habitat surveys. James holds Natural England Survey Licences in respect of bats, great crested newts, crayfish and barn owls. He has also successfully completed numerous courses run by IEEM, BCT and FSC regarding protected species and in carrying out Phase 1 Habitat surveys.

****

3. SURVEY RESULTS.

3.1. Data Search Results.

3.1. A data search requested from Sheffield Biological Record Centre for records of protected species and protected site within the survey area.

3.2. The data search results show records of bats within the surrounding Penistone area. However, the majority of the records apply to specific sites to the north and west and will not directly impact on the proposed survey area.

3.2. The Surveyed Area.

3.2.1. The survey area is an old quarry which is now largely used as an allotment and garden with several garden buildings located along the northern elevation. There is a hard standing area which is surrounded by several mixed construction garage buildings. The survey area is surrounded by residential housing on the western and southern elevation. There is a large grazing field to the north and a grazing field with mixed woodland to the west.

3.2.2. The aerial photograph below shows the survey area and the direct surrounding area.



3.2.3. The aerial photograph below shows the survey area and the extended surrounding area.



3.3. Description of Habitats.

3.3.1. Appendix XI of this report contains annotated maps marked up with the varying habitats that are cross referenced to target notes in Appendix XII of this report. The habitats on and adjacent to the site are:-

- Improved grassland.
- Tall ruderal herb.
- Walls.
- Fencing.
- Buildings.
- Hedgerows.
- Bare ground.

3.3.2. The photograph below shows the eastern boundary of the site looking from south to the north. The eastern boundary comprises dry stone wall between the site and the adjacent residential property. There are several garage buildings within this area of the site.



3.3.3. The two photographs below show the northern elevation of the site. There is an area of arable land which is used as allotments. The boundary comprises (*Crataegus monogyna*) hawthorn hedgerow on the eastern elevation and a dry stone wall on the western elevation. To the north of the site there is a large area of improved grassland.



3.3.4. The photograph below shows the western elevation of the site looking from the south to the north. The western boundary of the site comprises a dry stone wall. There is an area of arable land which is used as allotments. There is an area of (*Pleioblastus viridistriatus*) bamboo, (*Ligustrum japonicum*) privet and (*Crataegus monogyna*) hawthorn. To the west of the site there is an area of improved grassland and tall ruderal herbs.



3.3.5. The photograph below shows the southern boundary of the site which comprises a dry stone wall. Growing on top of the wall there are two mature (*Acer pseudoplantanus*) sycamore trees along with (*Sambucus nigra*) elder and (*Cornus sanguinea*) dogwood. To the south of the dry stone wall there is a grass verge with a hard standing track.



3.3.6. The photograph below shows the view across the centre of the site from the north eastern corner looking to the south west. The area is mainly tall ruderal herbs and rough grassland.



3.3.7. The photograph below shows the hedgerow which is planted along the top of a steep bank approximately 10m from the northern boundary. The hedgerow comprises (*Fagus sylvatica*) copper beech, (*Crataegus monogyna*) hawthorn, (*Ilex*) holly, (*Prunus laurocerasus*) laurel, (*Catawbiense*) Rhododendron, (*Conifer*) conifer and (*Pinus*) Pine.



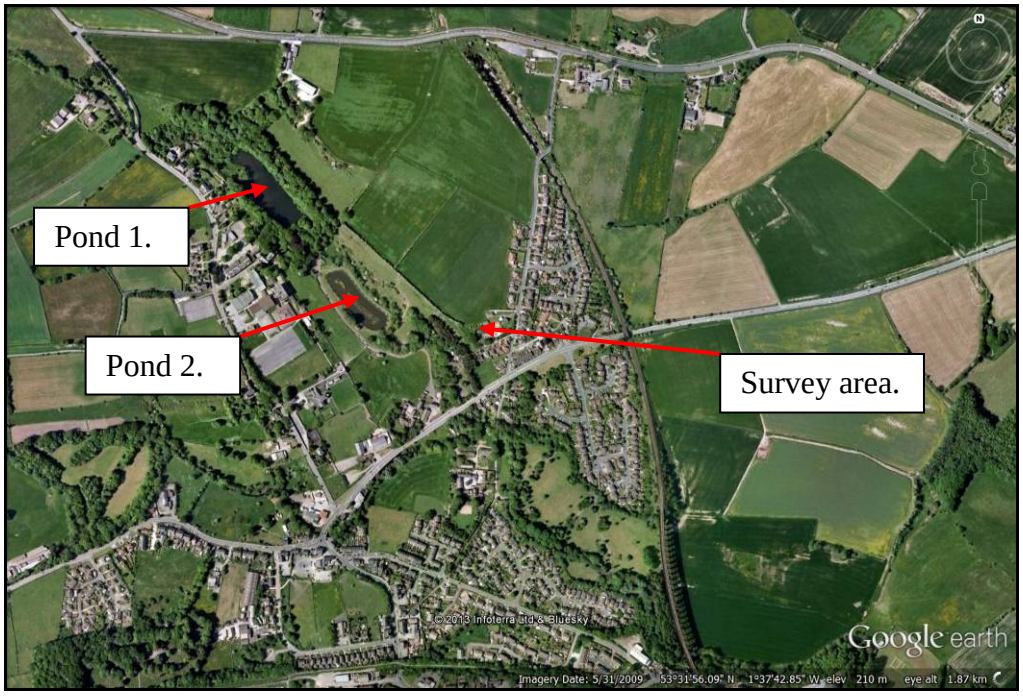
3.4. Description of Fauna.

3.4.1. No badger setts or badger field signs were identified within the surrounding area during this survey.

3.4.2. There were no watercourses identified within the survey area that would provide a suitable habitat for water voles, otters or crayfish.

3.4.3. Two ponds were identified within 500m of the survey area during this survey. The ponds are assessed separately below:-

3.4.3.1. The aerial photograph below shows the location of the two ponds and the survey area.



3.4.3.2. Pond 1 is located to the west of the survey area in an area of mixed woodland. The pond is well tended with regular water fowl present. The pond is stocked with fish and regularly fished by Nether Mill Course Fisheries.

3.4.3.3. Pond 2 is located to the west of the survey area and is located approximately 100m south of pond 1. The pond is well tended with regular water fowl present. The pond is stocked with fish and regularly fished by Nether Mill Course Fisheries.

3.4.4. HSI Assessment.

3.4.4.1. The following table shows the Habitat Suitability Index Scores for Pond 1. This is a method of calculating the potential presence of great crested newts in a pond by awarding points against specified criteria.

3.4.4.2. An explanation of the HSI criteria is included in Appendix XIV of this report.

HSI		Pond 1	Pond 2
SI1	Location	1	1
SI2	Pond Area		
SI3	Pond Drying	0.9	0.9
SI4	Water Quality	0.67	0.67
SI5	Shade	0.2	1
SI6	Fowl	0.67	0.67
SI7	Fish	0.01	0.01
SI8	Ponds	0.6	0.6
SI9	Terrestrial Habitat	1	0.67
SI10	Macrophytes	0.7	0.7
Total score		0.41	0.47
Presence		Below average.	Below average.

3.4.4.3. The HSI assessment of Ponds 1 and 2 gives a score of below average. This means there is a below average potential for breeding great crested newts within these ponds.

3.4.5. There were two mature (*Acer pseudoplantanus*) sycamore trees identified on the southern boundary of the site.

3.4.5.1. The photograph below shows the two mature (*Acer pseudoplantanus*) sycamore trees from looking from the north to the south.



3.4.5.2. There were no cracks or crevices identified on either tree which will provide a suitable habitat for roosting bats. The site will provide a suitable habitat for foraging bats during the bat activity season which extends from May to September each year.

3.4.5.7. Several buildings were identified on the site and are assessed separately below:-

3.4.5.7.1. The photograph below shows the south eastern elevation of Building 1. Building 1 is a greenhouse which is metal framed and glazed with thick plastic. This building will not provide a suitable habitat for roosting bats.



3.4.5.7.2. The photograph below shows the south eastern elevation of Building 2. Building 2 is a wooden shed with a pitched roof which is covered with a felt. Access

could be gained which identified that there are no gaps or crevices into the building. This building will not provide a suitable habitat for roosting bats.



3.4.5.7.3. The photograph below shows the south eastern elevation of Building 3. Building 3 is a wooden shed with a sloping roof covered with corrugated cement sheeting. Access could be gained which identified there is access into the building through a broken window. However, this building will not provide a suitable habitat for roosting bats.



3.4.5.7.4. The photograph below shows the southern elevation of Building 4. Building 4 comprises a single storey garage with a pitched roof. The walls comprise flat cement sheeting and the roof is covered with corrugated cement sheets. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.5.7.5. The photograph below shows the southern elevation of Building 5. Building 5 comprises a single storey garage with a pitched roof. The walls comprise corrugated cement sheet walls and roof. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.5.7.6. The photograph below shows the southern elevation of Building 6. Building 6 comprises a single storey garage with a pitched roof. The walls comprise corrugated cement sheet walls and roof. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.5.7.7. The photograph below shows the southern elevation of Building 7. Building 7 comprises a single storey garage with a pitched roof. The walls comprise corrugated metal sheet walls and roof. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.6.7.8. The photograph below shows the north eastern elevation of Building 8. Building 8 comprises a single storey garage with a sloping roof. The walls comprise prefabricated pebble dashed concrete panels. Access could not be gained, however there were several gaps and crevices within the building which will provide access for bats and birds. This building will not provide a suitable habitat for roosting bats.



3.4.6.7.9. The photograph below shows the north western elevation of Building 9. Building 9 comprises a single storey garage with a pitched roof. The walls comprise corrugated metal sheet walls and corrugated cement sheet roof. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.6.7.10. The photograph below shows the northern elevation of Building 10. Building 10 comprises a single storey garage with a pitched roof. The walls comprise corrugated metal sheet walls and roof. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.6.7.11. The photograph below shows the northern elevation of Building 11. Building 11 comprises a single storey garage with a pitched roof. The walls comprise corrugated metal sheet walls and roof. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.6.7.12. The photograph below shows the north eastern elevation of Building 12. Building 12 comprises a single storey garage with a pitched roof. The walls comprise wooden sheet walls and a corrugated metal sheet roof. Access could be gained which identified that there are gaps and crevices within the building which will provide access for bats and birds. However, this building will not provide a suitable habitat for roosting bats.



3.4.7. No Schedule 9 alien invasive plant species were identified within the survey area during this survey.

3.4.8. The survey area including the buildings will provide a suitable habitat for nesting birds. Two nests were identified during this survey.

3.4.8.1. Two bird nests were identified to the rear of Building 9 on top a piece of wood. The photograph below shows the location of the two nests.



3.4.8.2. One bird nest was identified in the western (*Acer pseudoplantanus*) sycamore trees located on the southern boundary. The photograph below shows the location of the nest.



3.4.9. The survey area will not provide a suitable habitat for reptiles and none were identified during this survey.

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4. EVALUATION OF FINDINGS.

4.1. There were no badger setts or badger field signs identified within the survey area during this survey. There will be no impact on badgers during the proposed works.

4.2. There were no watercourses identified within the survey area that will provide a suitable habitat for water voles, otters or crayfish. There will be no impact on these species during the proposed works.

4.3. Two ponds were identified within 500m of the survey area during this survey. Ponds 1 and 2 were assessed using the HSI calculation and were assessed as below average habitats for breeding great crested newts. There are no records of great crested newts within 500m of the survey area and therefore there will be no impact on great crested newts in connection with the proposed works.

4.4. There were no buildings or trees on the site that will provide a suitable habitat for roosting bats. However, bats will be present foraging within the survey area during the bat activity season which extends from May to September (weather dependant). There will be no impact on foraging bats during the proposed works.

4.5. No Schedule 9 alien invasive plant species were identified within the survey area during this survey. There will be no impact on any invasive species during the proposed works.

4.6. The vegetation, trees and buildings will provide a suitable habitat for nesting birds during the nesting bird season. This includes the existing nest in the building and the large (*Acer pseudoplantanus*) sycamore tree. The nesting bird season extends from March to September, weather dependant. There will be an impact on nesting birds if these areas are to be affected during the proposed works in the nesting bird season.

4.7. There were no areas of suitable reptile refugia identified within the survey area and no reptiles were identified during this survey. There will be no impact on reptiles during the proposed works.

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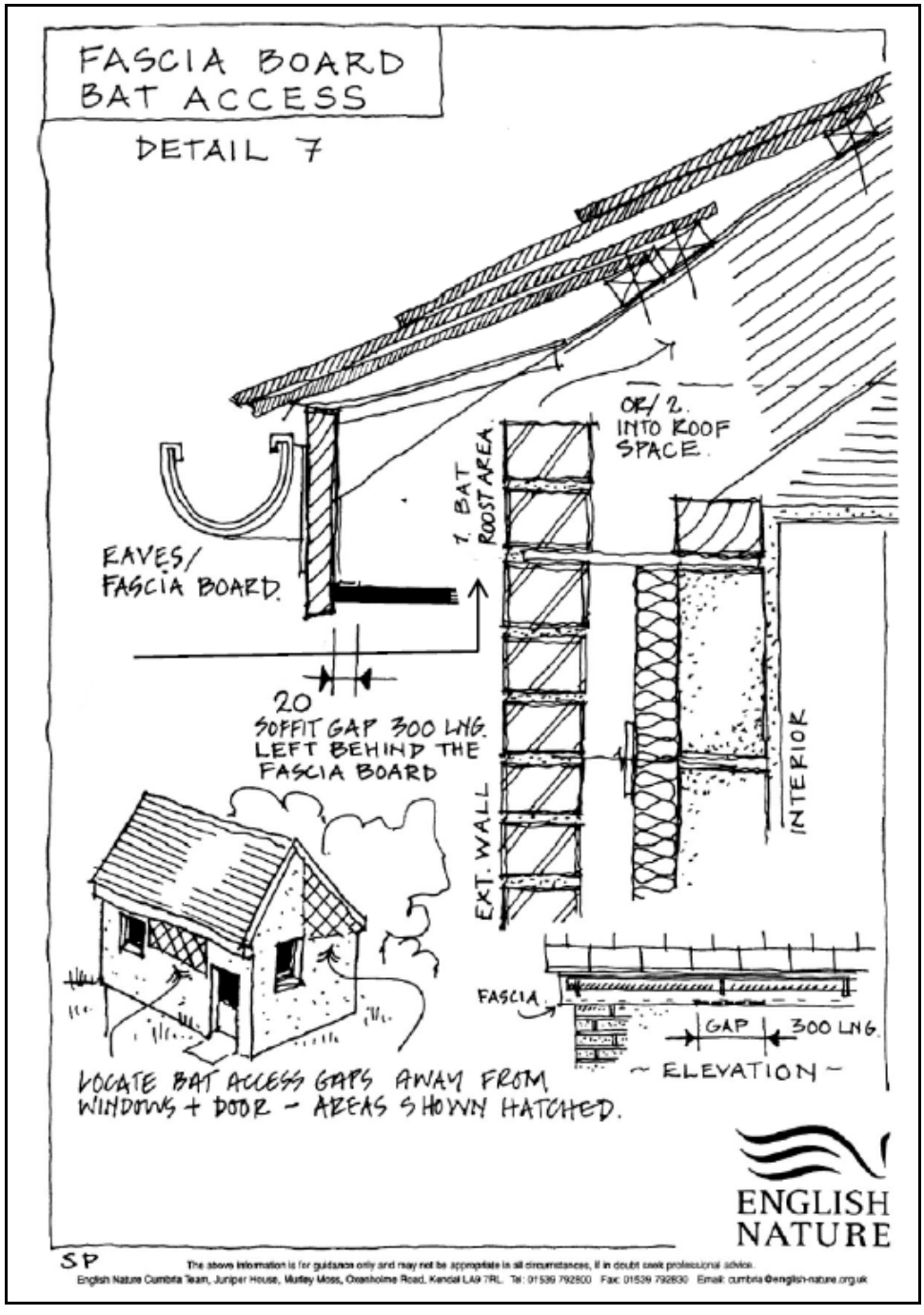
5. RECOMMENDATIONS.

5.1. It is recommended that hedgerows be left in place during the works or are reinstated with a similar linear feature. During the proposed works bat roosting potential should be incorporated on the site in the form of bat boxes, bat access points or bat bricks. This will enhance the biodiversity for bats on the site and the surrounding area.

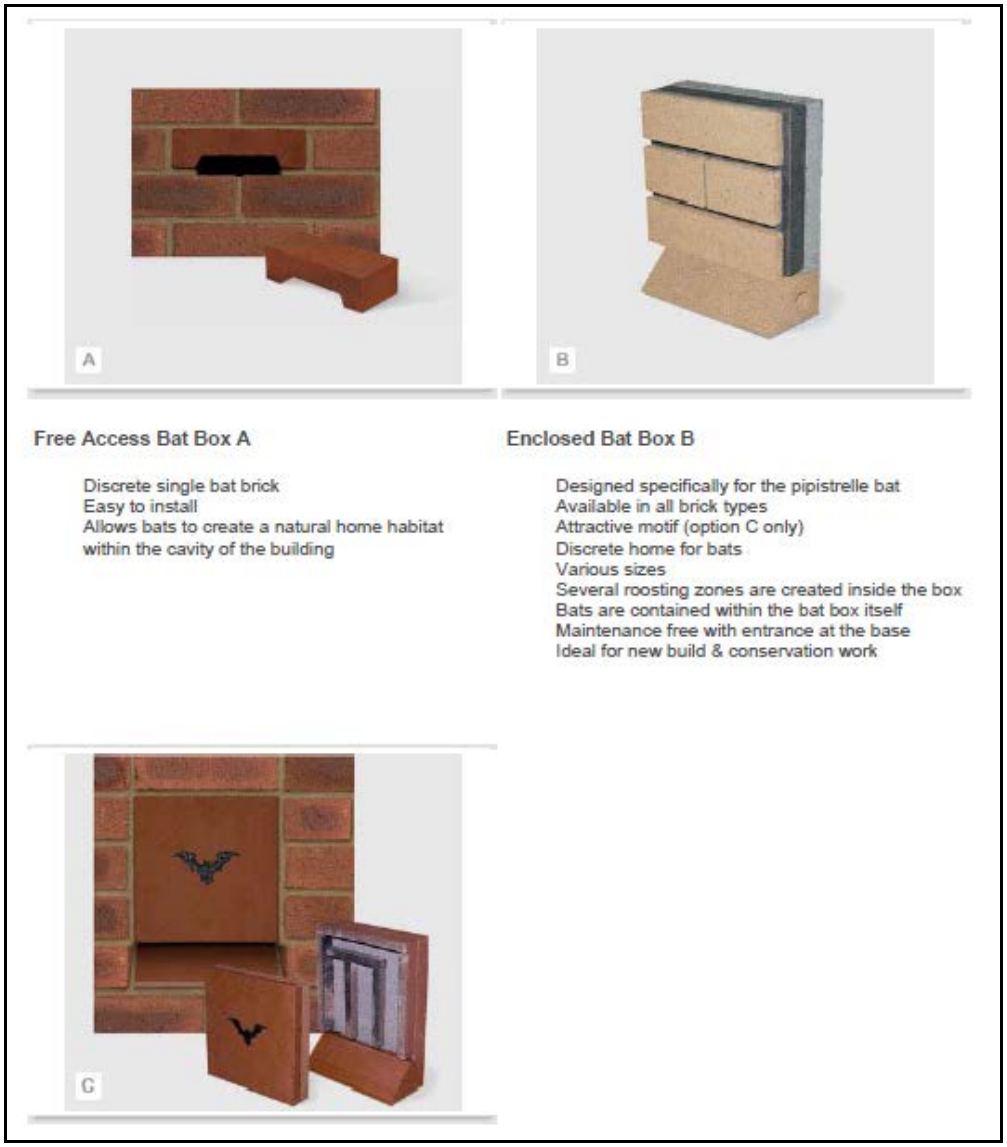
5.1.1. The photograph shows an example of a bat box mounted on a sycamore tree on a site.



5.1.2. The diagram below shows how bat access can provided on a property by leaving gaps underneath the fascia boards.



5.1.3. The photographs below show three different styles of bat bricks which can be incorporated into the development.



5.2. The vegetation on site and the buildings will provide a suitable habitat for nesting birds during the nesting bird season. The nesting bird season extends from March to September weather dependant. It is recommended that the demolition of the buildings and any vegetation clearance on the site is carried out outside the nesting bird season.

5.2.1. If the works are to be carried out during this time they should be preceded by a nesting bird survey carried out by a suitably knowledgeable person prior to works commencing. If a nest is identified the nest should be left undisturbed until the young have fledged.

5.3. All lighting on the proposed properties should be down lighting which will not affect the foraging bats within the survey area.

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Prepared by:	
James Campbell.	Date: 12th April 2013.

Checked by:	
Derek Whitcher. BSc, MCIEEM, MCMI.	Date: 19th April 2013.

Appendix I.

BADGER INFORMATION.

The following background information on the territorial behaviour, ecology and legal protection of badgers is provided to enable the reader to more clearly understand the contents of this report.

1. Territoriality.

Badgers live in social groups called clans and are territorial. Each clan territory can vary considerably in size, from 0.2 sq. km to 1.5 sq. km. The average number of badgers in a clan has been calculated to be six but this number can vary between two and twenty badgers. In areas with a significant badger population there will be contiguous clans and a well-defined boundary between clan territories will exist with the badgers scent marking their boundary with areas of dung pits, called latrines. In areas with relatively low badger populations there will be less competition for territory and the amount of territorial markings will be low or even non-existent.

Territorial boundaries can be defined using a technique called bait marking. Over a two-week period badgers are fed at their main setts with food containing coloured plastic pellets, a different colour at each main sett. The colour of pellet found in dung pits and territorial latrines shows what areas each clan of badgers is occupying.

2. Ecology.

Badgers are omnivorous but their preferred food source is worms and insects. Worms are most abundant in well-grazed pastureland while mixed woodland is a good source of insects and grubs. Badgers have a soft and supple nose with which they snuffle into the ground to find insects. When they do this they leave distinct round holes known as snuffle holes or grubbings. Badgers easily find worms on the surface of well-grazed pastureland and often leave no visible indications of this foraging.

The badger's most important sense is that of smell. They will use particular paths around their territory repeatedly, following a scent trail from previous use. As a result badger paths become well worn. These paths are important to the badgers and obstruction to these paths will interfere with the badger's movement around their territory.

Badgers mate at any time of year but delayed implantation controls the time of birth. Most cubs are born between January and March but they can be born at any time between December and June. An average of two to three badger cubs are born to each sow and will initially be totally dependent on their mother. Cubs do not appear above ground until during April or May when they are 8 – 10 weeks old and are not fully weaned until June of each year.

3. Badger Setts.

A badger sett is any structure or place, which displays signs of current or seasonal use by a badger. Within a badger clan territory there can be several badger setts, which are categorised in the following ways.

Main Sett. There will normally be one main sett in a territory. This will generally be the largest sett in the territory, typically with five or more entrances, will be permanently occupied throughout the year and used as the breeding sett.

Outlying Sett. These are the smallest setts with generally only one or two entrances. They are intermittently occupied and there can be any number in a territory.

Annex Sett. A sett of intermediate size, located close to the main sett and connected by well-defined paths. These are occupied for prolonged periods and may be used as a second breeding sett if there are two breeding sows in the clan.

Subsidiary Sett. A sett of intermediate size, similar to an annex sett but located at some distance from the main sett and not connected to the main sett by defined paths.

4. Legislation

Badgers and their setts are protected by the Protection of Badgers Act 1992. Under the Act it is illegal to:-

- Willfully kill, injure or take a badger or attempt to do so.
- Cruelly ill-treat a badger.
- Interfere with a sett by doing any of the following:-
    - (i) damaging a badger sett or any part of it
    - (ii) destroying a badger sett
    - (iii) obstructing access to a badger sett
    - (iv) causing a dog to enter a sett
    - (v) disturbing a badger while it is occupying a sett.

Penalties for offences under the Act are up to six months in prison and a fine of £5,000 for each offence.

Disturbance to a badger in a sett can be caused by working close to a sett.

Before any work goes ahead which will cause damage to setts or disturbance to badgers, a licence will be needed from Natural England in accordance with their guidelines. To obtain a licence an application must be made giving at least one months notice. This application must include full justification for the work, the manner in which any work is to be carried out, full supporting information and a named person capable of carrying out specialised badger work, to supervise that licence. Natural England will normally only issue such licences for work to be carried out between the months of July and October inclusive, to avoid the breeding season, although exceptions may be possible if a sound justification can be made.

Appendix II. WATER VOLE INFORMATION.

It is necessary to understand a little about water voles, their basic nature, ecology and legal protection in order to evaluate the findings of this report.

The water vole is the largest of the British voles. It lives in a series of holes or burrows at the waters edge and can be found along the banks of ditches, streams, rivers, lakes and canals. Although water voles live in colonies, the breeding females are territorial, each defining their contiguous territory with latrines during the breeding season. This lasts from March to October.

The water vole is herbivorous, feeding primarily on the lush aerial stems and leaves of waterside plants growing along side the watercourse. Its activity is normally confined to the area within two metres of the watercourse. Bankside vegetation in this area is not only essential for food but also for cover from predators.

The water vole population has been on the decline in recent years. This is partly due to loss of suitable riverside habitats but also due to the increasing population of predators, particularly the escaped American mink. Population decline has been dramatic and has accelerated over the last seven years. Surveys carried out by the Vincent Wildlife Trust show a loss of 67% of occupied sites and of 88% of the remaining population in the last seven years.

The water vole has received limited legal protection since April 1998 when it was included in Schedule 5 of the Wildlife and Countryside Act 1981. Section 9(4) of the Act protects the water vole's place of shelter or protection but does not protect the water vole itself.

From the 6th April 2008 water voles received an increased level of protection, becoming fully covered by the provisions of section 9 of the Wildlife and Countryside Act 1981 (as amended).

Full legal protection under the Act makes it an offence to:

- Intentionally kill, injure or take water voles.
- Possess or control live or dead water voles or derivatives.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection.
- Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose.
- Sell water voles or offer or expose for sale or transport for sale.
- Publish or cause to be published any advertisement which conveys the buying or selling of water voles.

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Appendix III. OTTER INFORMATION.

It is necessary to understand a little about otters, their basic nature, ecology and legal protection in order to evaluate the findings of this report.

Otters are nocturnal and are active all year round. They are large with an adult male reaching 1.2m from nose to tail and weighing about 10kg.

Otters live by undisturbed waters where there is plenty of cover, mostly by freshwater lakes, rivers and quiet small streams as well as some coasts.

Fish are the otter's main source of food, especially eels and they therefore rely on good fish populations. They also eat amphibians and the occasional bird and small mammal.

An otter may use over 40km of river and needs many resting places throughout this range. A female otter will give birth to 1 to 3 cubs in a natal holt which is often away from the main river and must be completely undisturbed.

Generally the only evidence seen of the otter is its faeces or 'spraint', which are deposited along a watercourse in prominent positions.

Once found throughout Britain, most of our otter populations crashed in the 1960's due to poisoning from agricultural pesticides which drained into our river systems. Although this threat has passed and otter numbers are slowly beginning to recover, they are still subject to a number of serious pressures.

- Habitat loss through intensive river management for drainage and flood defence and due to agriculture and urban development.
- Inadequate food supplies, mainly fish.
- Disturbance of breeding sites by people and especially dogs.
- Low water quality and low river flows.
- Roads which cross or run alongside, rivers.

The UK Biodiversity Plan (BAP) contains an otter Species Action Plan (SAP) aimed at maintaining its existing range and population status, as well as increasing the number of populations through re-colonisation.

The otter is listed on Appendix 1 of CITES, Appendix II of the Bern Convention and Annexes II and IV of the Habitats Directive. It is protected under Schedule 5 of the WCA 1981 and Schedule 2 of the Conservation (Natural Habitats, etc.) Regulations, 1994 (Regulation 38). The European sub-species is also listed as globally threatened on the IUCN/WCMC RDL.

39.—(1) It is an offence-

(a) deliberately to capture or kill an otter;

(b) deliberately to disturb an otter;

(c) to damage or destroy a breeding site or resting place of an otter.

Appendix IV. BAT INFORMATION.

It is necessary to understand a little about bats, their basic nature, ecology and legal protection in order to evaluate the findings of this report.

Over 15 species of bat have been recorded in Britain. These fall into two families, the horseshoe bats and the 'ordinary bats'. They are extremely difficult to identify in the hand and even more so in flight.

All appear to be diminishing in numbers, probably due to shortage of food, caused by pesticides, as insects are their sole diet, and habitat change.

As their diet consists solely of insects, bats hibernate during the winter when their food source is at its most scarce. They will spend the winter in hollow trees, caves, mines and the roofs of buildings.

Certain species, particularly the pipistrelle (the commonest and most widespread British bat) can quickly adapt to man made structures and will readily use these to roost and to rear their young.

Bats are protected under the Wildlife and Countryside Act 1981, The Habitats Regulations 1994 and the Countryside & Rights of Way Act 2000.

It is an offence to intentionally or recklessly kill, injure or capture or disturb bats or to damage, destroy or obstruct access to any place used by bats for shelter or protection.

A breeding or resting site of any bat is known as a bat roost. A bat roost is therefore any structure a bat uses for shelter or protection. Because bats tend to use the same roosts each year, legal opinion is that the roost site is protected whether or not the bats are present at that time.

Bat roosts can be identified by looking for:-

- Suitable holes, cracks and crevices.
- Bat droppings.
- Prey remains.
- By carrying out night observations using a bat detector.

Where development proposals are likely to affect a bat roost site, a licence is required from Natural England.

The person applying for that licence has to be suitably qualified and experienced in bat matters. That person is then responsible for ensuring that the measures contained in the licence are carried out.

Appendix V.

BACKGROUND GREAT CRESTED NEWT INFORMATION.

The great crested newt population has suffered a major decline in Britain over the last century. Numerous ponds have been lost, unmanaged ponds have become silted up and over-shaded, development has destroyed ponds and associated terrestrial habitat and caused fragmentation of populations. The loss of grassland, scrub and woodland has resulted in fewer opportunities for foraging, dispersal and hibernation.

The UK Biodiversity Plan (BAP) contains a great crested newt Species Action Plan (SAP) aimed at maintaining its existing range and population status, as well as increasing the number of populations through re-colonisation.

The great crested newt is listed on Schedule 5 of the Wildlife and Countryside Act 1981, recently modified by the Countryside and Rights of Way Act 2000.The great crested newt is therefore subject to the provisions of Schedule 9, which make it an offence to:

- Intentionally kill, injure or take a great crested newt.
- Possess or control any live or dead specimen or anything derived from a great crested newt.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt.
- Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place, which it uses for that purpose.

The great crested newt is also listed on Annex II and Annex IV of The Conservation (Natural Habitats &c) Regulations 1994. Regulation 39 makes it an offence to:

- Deliberately capture or kill a great crested newt
- Deliberately disturb a great crested newt.
- Deliberately take or destroy the eggs of a great crested newt.
- Damage or destroy a breeding site or resting place of a great crested newt.

The legislation applies to all life stages of great crested newts.

The maximum fine on conviction of offences under Section 9 and Regulation 39 currently stands at £5,000. The CroW Act 2000 amendment also allows for a custodial sentence of up to six months instead of, or in addition to, a fine. In addition, items, which may constitute evidence of the commission of an offence, may be seized and detained.

In order to understand the potential effects of development it is essential to understand a little of the great crested newt ecology.

Great crested newts breed in ponds and other water bodies. They can begin to migrate to their breeding ponds as early as the first frost-free days in late January with the majority reaching their breeding ponds by mid March. Timing will be influenced by a number of factors, mainly evening temperatures above 5C and recent rain.

The peak egg-laying period is from mid-March to mid-May. The newts will lay their eggs individually, mainly on the leaves of submerged plants. The larva hatch after three weeks and then take another 2-3 months to complete larval development. Adult newts generally leave their breeding ponds from late May onwards.

Once the larvae have completed metamorphosis (the transition from aquatic larvae to land-adapted juveniles, called efts), they emerge from the pond. This emergence begins in late August and generally continues until late October. It takes 2-4 years to reach sexual maturity, during which time the newts will be land based.

Adults and immature newts spend the winter in places that afford protection from frost and flooding. This will generally be underground amongst tree roots, in mammal burrows, or under suitable refuges above ground like deadwood or rubble piles. Hibernation may last from October to February.

Whilst on land, outside the hibernation period, great crested newts will forage at night, taking a wide range of invertebrate prey.

From the above, it can be seen that great crested newts spend the majority of their time on land and only visit the ponds for breeding purposes. As a result, surveys need to be timed very carefully. Terrestrial surveys are very inaccurate and the only time that surveys can be truly thorough is in the narrow window of opportunity between March and September.

Great crested newts will travel large distances between ponds and terrestrial refuges. It is recommended that anywhere within 500m of a pond should be treated as potential great crested newt habitat and should be surveyed and evaluated.

An experienced surveyor must carry out the surveys and must be in possession of an appropriate Natural England great crested newt survey licence.

It is essential that great crested newt surveys are planned well in advance of any development and ideally before Planning Consent is sought. Surveys can only be carried out at the appropriate time of year and repeat surveys are essential. The guidelines suggest that between four and six surveys need to be carried out, three of these between mid-March and mid-June.

If great crested newts are to be effected by any development, a thorough assessment of the population is essential followed by the design of a comprehensive mitigation package. Only when this has been done can a licence application be submitted to Natural England for approval. It takes 30 working days for a licence application to be determined and the period of time that mitigation measures take can be measured in months. It is therefore essential to plan well in advance of development commencing.

Appendix VI. CRAYFISH INFORMATION.

It is necessary to understand a little about crayfish, their basic nature, ecology and legal protection in order to evaluate the findings of this report.

Crayfish are the largest and most mobile freshwater invertebrate. The white-clawed crayfish *(Austropotamobius pallipes)* is the only native crayfish and this is protected under European and UK legislation.

White clawed crayfish are generally found in areas with relatively hard, mineral rich waters on calcareous and rapidly weathering rocks. They can be found in a wide variety of environments including canals, streams, rivers, lakes reservoirs and water-filled quarries.

White clawed crayfish are typically found in water between 0.75 and 1.25m deep but can occur in very shallow streams with as little water as 50mm and in deeper, slow flowing rivers. They are typically found under rocks and submerged logs or among tree roots and in river-banks. White clawed crayfish are omnivorous but primarily carnivorous eating macro invertebrates and carrion when available. They will also eat worms, insect larvae, snails, small fish, macrophytes, algae and calcified plants.

Crayfish can live for up to ten years and generally reach sexual maturity after three to four years. Breeding takes place between September and November when the water temperature drops consistently to below ten degrees centigrade. Females over winter with a clutch of eggs held beneath their tail. These may number from 20 to 120 and hatch on the female. The juveniles are released from the mother from June in the south to August in the north.

The main threat to the indigenous white-clawed crayfish is the spread of introduced non indigenous species, particularly the larger, faster growing and aggressive North American signal crayfish *(pacifastacus leniusculus).* They are also vulnerable to disease, particularly porcelain disease and crayfish plague, and the latter carried by the signal crayfish.

Crayfish are also extremely vulnerable to pollution incidents, particularly those involving biocides, silage and sheep dip.

As a result, white-clawed crayfish are endangered across most of its range and has been given protection under both European and UK legislation.

The white-clawed crayfish is listed on Annex V of the Habitats Directive (EEC 1992), which means that Member States should take measures to ensure that the taking of white-clawed crayfish in the wild is compatible with their being maintained at a favourable status.

In 1998, the white-clawed crayfish was added to Schedule 5 of the Wildlife and Countryside Act giving it partial protection in relation to Section 9(1) as far as it relates to taking and in respect of Schedule 9(5). It is therefore an offence to

intentionally take any white-clawed crayfish from the wild and an offence to sell wild crayfish.

Licences are available from English Nature to allow the taking of white-clawed crayfish for certain specified purposes, including scientific or educational purposes and for conservation purposes. An English Nature survey licence is required where any survey is aimed at finding white-clawed crayfish and involves handling them for counting or identification purposes.

An English Nature Conservation Licence is required for the purpose of conserving white-clawed crayfish or introducing them to particular areas.

Non indigenous crayfish species are also covered under the wildlife and Countryside Act 1981. Section 14 makes it an offence for any person to (a) release or allow to escape, any wild animal which is of a kind not ordinarily resident in or a regular visitor to Great Britain in a wild state or; (b) is included in Schedule 9 of the Wildlife and Countryside Act.

Three species of non-indigenous crayfish are listed on Schedule 9. These are the signal crayfish *(Pacifastacus leniusculus),* the narrow clawed crayfish *(Astacus leptodacylus)* and the noble crayfish *(Astacus astacus).* Any of these three species found during a survey cannot be returned to the wild.

Appendix VII. SCHEDULE 9 INVASIVE PLANT SPECIES.

1. Schedule 9 of the Wildlife and Countryside Act 1981 contains a list of invasive species of plant. Species listed under Schedule 9 are prohibited from release into the wild. Schedule 9, Section 14(2) prohibits 'planting' or 'causing to grow' in the wild of any plant listed in Part 2 of Schedule 9.

2. The following is a list of all the species of plant listed under Schedule 9 of The Wildlife and Countryside Act 1981.

Common Name	***Latin Name***
Alexanders, Perfoliate	*Smyrnium perfoliatum*
Algae, Red	*Grateloupia luxurians*
Archangel, Variegated Yellow	*Lamiastrum galeobdolon subsp. Argentatum*
Azalea, Yellow	*Rhododendron luteum*
Balsam, Himalayan	*Impatiens glandulifera*
Cotoneaster	*Cotoneaster horizontalis*
Cotoneaster, Entire Leaved	*Cotoneaster integrifolius*
Cotoneaster, Himalayan	*Cotoneaster simonsii*
Cotoneaster, Hollyberry	*Cotoneaster bullatus*
Cotoneaster, Small Leaved	*Cotoneaster microphyllus*
Creeper, False Virginia	*Parthenocissus inserta*
Creeper, Virginia	*Parthenocissus quinquefolia*
Dewplant, Purple	*Disphyma crassifolium*
Fanwort (Carolina Water-Shield)	*Cabomba caroliniana*
Fern, Water	*Azolla filiculoides*
Fig, Hottentot	*Carpobrotus edulis*
Garlic, Three-cornered	*Allium triquetrum*
Hyacinth, Water	*Eichhornia crassipes*
Kelp, Giant	*Macrocyctis pyrifera*
Kelp, Giant	*Macrocystis angustifolia*
Kelp, Giant	*Macrocystis intergrifolia*
Kelp, Giant	*Macrocystis laevis*
Kelp, Japanese	*Laminarial japonica*
Knotweed, Giant	*Fallopia sachalinensis*

Knotweed, Hybrid	*Fallopia japonica x Fallopia sachalinensis*
Knotweed, Japanese	*Fallopia japonica*
Leek, Few-flowered	*Allium paradoxum*
Lettuce, Water	*Pistia stratiotes*
Montbretia	*Crocosmia x crocosmiiflora*
Parrot's Feather	*Myriophyllum aquaticum*
Pennywort, Floating	*Hydrocotyle ranunculoides*
Potato, Duck	*Sagittaria latifolia*
Primrose, Floating Water	*Ludwigia peploides*
Primrose, Water	*Ludwigia grandiflora*
Primrose, Water	*Ludwigia uruguayensis*
Rhododendron	*Rhododendron ponticum*
Rhododendron	*Rhododendron ponticum x Rhododendron maximum*
Rhubarb, Giant	*Gunnera tinctoria*
Rose, Japanese	*Rosa rugosa*
Salvinia, Giant	*Salvinia molesta*
Seafingers, Green	*Codium fragile*
Seaweed, Californian Red	*Pikea californica*
Seaweed, Hooked Asparagus	*Asparagopsis armata*
Seaweed, Japanese	*Sargassum muticum*
Seaweeds, Laver (except native species)	*Porphyra spp except*
	p. amethystea
	p. leucosticte
	p. linearis
	p. miniata
	p. purpurea
	p. umbilicalis
Stonecrop, Australian Swamp (New Zealand Pygmyweed)	*Crassula helmsii*
Wakame	*Undaria pinnatifida*
Waterweed, Curly	*Lagarosiphon major*
Waterweeds	*All species of the genus Elodea*

3. The Government has acknowledged the problems that can be caused by non-native invasive species. In 2008 the Government launched "The Invasive Non-Native

Species Framework Strategy for Great Britain". The strategy provides a framework for a more co-ordinated approach to invasive species management. It seeks to create a stronger sense of shared responsibility across government, key orgainisations, land managers and the public.

4. The Non Native Species Secretariat has been established to oversee the implementation of the strategy. Details of the secretariat including risk assessments and action plans for some species are available at www.nonnativespecies.org.

5. In general there are four basic methods of controlling weeds; mechanical, chemical, natural and environmental.

5.1. Mechanical control includes cultivation, hoeing, pulling, cutting, raking dredging or other methods to uproot or cut weeds.

5.2. Where this method is used all plant material must be considered "controlled waste" and must be disposed properly.

5.3. Chemical control uses approved herbicides.

5.4. Natural control uses pests and diseases of the target weed to weaken it and prevent it from becoming a nuisance.

5.5. Environmental control works by altering the environment to make it less suitable for weed growth, for example by increasing or decreasing water velocity.

Appendix VIII. NESTING BIRD INFORMATION.

It is necessary to understand a little about the legal protection offered to nesting birds in order to evaluate the findings of this report.

Part 1.-(1) Of the Wildlife and Countryside Act 1981states that:-

If any person intentionally:-

(a) kills, injures or takes any wild bird;
(b) takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
(c) takes or destroys an egg of any wild bird,

he shall be guilty of an offence.

Part 1.-(5) of the Act states that:-

If any person intentionally:-

(a) 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
(b) disturbs dependant young of such a bird,

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

The Countryside and Rights of Way Act 2000 amends the above by inserting after “intentionally” the words “or recklessly”.

The nesting season will vary according to the weather each year but generally commences in March, peaks during May and June and continues until September.

It is also worth remembering that some birds nest in trees, scrub and buildings but others are ground nesting.

The best way to avoid this issue is to plan for vegetation clearance to be carried out outside the bird-nesting season.

Appendix IX.

REPTILES - GRASS SNAKE AND ADDER INFORMATION.

The grass snake (*Natrix natrix*)and the adder (*Vipera berus*)are the two most common snakes to be found in the UK. Adders are found all over Britain while the grass snake becomes rarer towards the north and are rarely found in Scotland.

The grass snake is usually around 120cm long, live in a variety of rough habitats and lay their eggs in warm rotting vegetation. The background colour is dark green and the body is marked with vertical black bars and spots that run along its sides. There is generally a dark collar marking.

The adder is the only native species that is venomous but this is rarely harmful to humans. Adult adders are generally up to 66cm long. Background colouration is a light shade of grey or brown with a black zigzag marking along the length of the back. As with all reptiles, colouration varies and becomes duller as sloughing (skin shedding) approaches.

Both snakes hibernate, spending the winter in burrows or under logs protected from the cold and predators. Maintaining the right body temperature is vital to reptiles' survival. In the morning, they find a warm basking site to heat up their bodies, then later they may move back into the shade because they do not sweat and have to be careful not to overheat. During hot summers, adders will try to move to damper, cooler sites.

Both snakes are protected under schedule 5 of the Wildlife and Countryside Act 1981. They received greater protection following reviews of the schedules published in 1988 and 1991. This means they are protected against intentional or recklessly killing and injuring and against sale or transporting for sale.

Appendix X. REPTILES - LIZARD INFORMATION.

The common or viviparous lizard (*Lacerta vivipara*) is one of three species of lizard that occur in the UK. They have a dry scaly skin and are variable in colour ranging from brown or yellow-brown to almost green with varying patterns of spots or stripes. The typical length of an adult is 150mm, including the tail.

Common lizards hibernate over the winter, emerging from February onwards depending upon the weather. They begin to mate in April and May and the young are born in late July or August. The lizard gives birth to live young, hence the term viviparous, meaning live bearing.

The lizards draw their body warmth from the sun and consequently spend long periods basking in the sun. They are commonly seen on road and railway embankments and on walls where they sit for long periods soaking up the heat of the sun before going to find food.

They occupy a wide range of habitats including woodland, marshes, heathland, moors, sand dunes, hedgerows and bogs.

Common lizards hunt insects, spiders, snails and earthworms. They stun their prey by shaking it and then swallow it whole.

At night, and when startled, they will shelter beneath logs or stones or under other refuges that may be available.

Common lizards are protected under schedule 5 of the Wildlife and Countryside Act 1981. They received greater protection following reviews of the schedules published in 1988 and 1991. This means they are protected against intentional or recklessly killing and injuring and against sale or transporting for sale.

Common lizards should not be confused with the somewhat larger sand lizard (*Lacerta agilis*). These are typically 190mm long and stockier than the common lizard. Their marking are distinctly different being considerably more colourful. Sand lizards are confined to moorland and coastal sand dunes where they lay their eggs in the warm sand. The range of the sand lizard in the UK is therefore very limited. Sand lizards are a European protected species.

The third species of lizard is the slow worm *(Anguis fragilis)*, which is frequently mis-identified as a snake. The firm body of the slow worm is distinctly cylindrical in shape and the tiny smooth scales result in a very smooth, shiny appearance. Colouration is typically a uniform grey to brown although there is a wide variation from straw coloured to almost black and some animals have very fine stripes or a zig-zag along the centre of the back. The typical length of an adult is 400mm.

Slow worms can be found in a wide variety of habitats throughout Britain and is the most likely reptile to be found in urban and suburban environments.

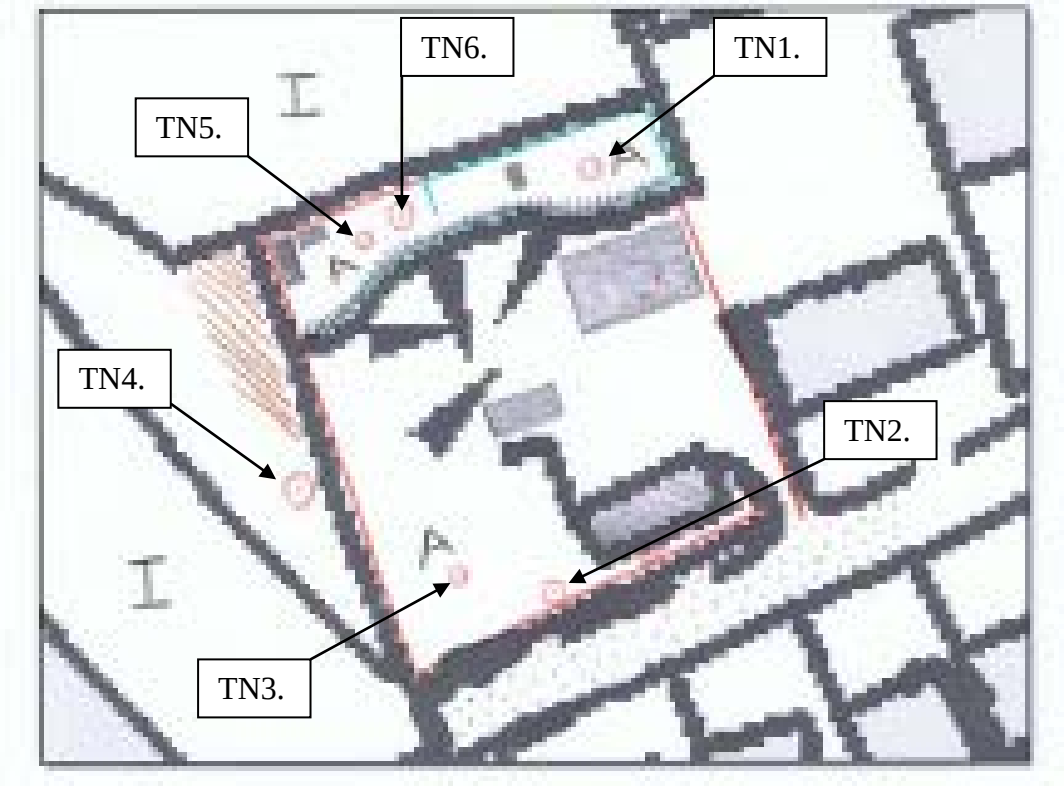
Slow worms hibernate over the winter, emerging from March onwards depending upon the weather. They begin to mate in April and May and six to twelve young are born in August or September.

Their favourite food is slugs but they will also eat insects and spiders.

Slow worms are hard to find. They will bask in the sun but they quickly and quietly move into cover when disturbed and do not generally attract attention as they retreat from a basking spot.

Slow worms are also protected under schedule 5 of the Wildlife and Countryside Act 1981. They received greater protection following reviews of the schedules published in 1988 and 1991. This means they are protected against intentional or recklessly killing and injuring and against sale or transporting for sale.

Appendix XI. ANNOTATED MAP OF THE SURVEY AREA.



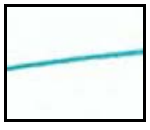
Key.



Arable Farm Land.



Improved Grassland.



Defunct Species Poor Hedge.



Tall Ruderal Herbs.



Fencing.



Buildings.



Walls.

Appendix XII. TARGET NOTES.

Target Note 1 is an area of allotment which is currently turned soil.

Target Note 2 is two large (*Acer pseudoplantanus*) sycamore trees one of which contains a nest.

Target Note 3 is an area of allotment which is currently turned soil.

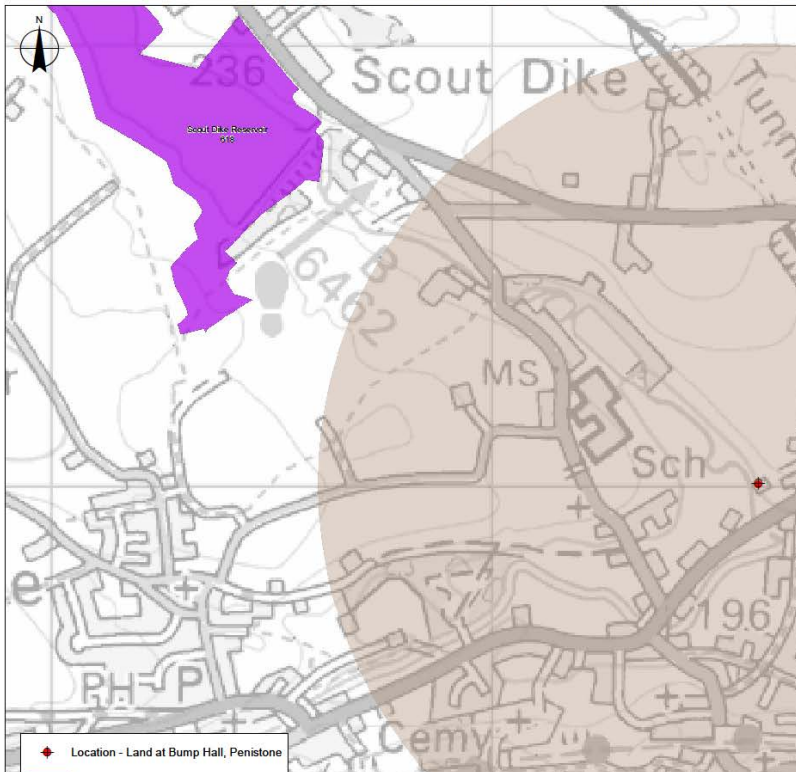
Target Note 4 is an area of tall ruderal herbs and several large trees adjacent to the site.

Target Note 5 is an area of allotment which is currently turned soil.

Target Note 6 is an area of small fruit trees in an area of grassland.

Appendix XIII. DATA SEARCH RESULTS.

Statutory and Non-statutory Nature Conservation Sites - - Land at Bump Ha



Grid Ref	*Location*	*Location Name*	*Date*	*Group*	*Scientific Name*	*Common Name*	*BAP Species*	*Wildlife and Countryside Act*	*Red and Amber birds*
SE250032	Penistone	Railway station	14/03/2013	bird	Passer domesticus	House Sparrow	1	0	1
SE2403	River Don Penistone area		22/09/2012	insect - mayfly (Ephemeroptera)	Baetis rhodani	Baetis rhodani	0	0	0
SE2403	River Don Penistone area		22/09/2012	insect - caddis fly (Trichoptera)	Potamophylax latipennis	Potamophylax latipennis	0	0	0
SE2403	River Don Penistone area		22/09/2012	insect - caddis fly (Trichoptera)	Rhyacophila dorsalis	Rhyacophila dorsalis	0	0	0
SE2403	River Don Penistone area		22/09/2012	bony fish (Actinopterygii)	Thymallus thymallus	Grayling	0	0	0
SE2403	River Don Penistone area		22/09/2012	bony fish (Actinopterygii)	Salmo trutta	Sea Trout	1	0	0
SE2403	River Don Penistone area		22/09/2012	insect - stonefly (Plecoptera)	Leuctra geniculata	Leuctra geniculata	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Fagus sylvatica subsp. purpurea	Copper Beech	0	0	0
SE242040	Penistone Grammar School		21/09/2012	centipede	Lithobius variegatus	Lithobius variegatus	0	0	0
SE242040	Penistone Grammar School		21/09/2012	insect - beetle (Coleoptera)	Oulema melanopa	Cereal Leaf Beetle	0	0	0
SE242040	Penistone Grammar School		21/09/2012	insect - hymenopteran	Lasius niger	Small Black Ant	0	0	0
SE242040	Penistone Grammar School		21/09/2012	crustacean	Oniscus asellus	Oniscus asellus	0	0	0

SE242040	Penistone Grammar School		21/09/2012	mollusc	Helix aspersa	Common Garden Snail	0	0	0
SE242040	Penistone Grammar School		21/09/2012	mollusc	Oxychilus alliarius	Garlic Snail	0	0	0
SE242040	Penistone Grammar School		21/09/2012	mollusc	Limax marginatus	Tree Slug	0	0	0
SE244030	St.John's School Penistone	pond area	21/09/2012	insect - butterfly	Pieris brassicae	Large White	0	0	0
SE244030	St.John's School Penistone	pond area	21/09/2012	amphibian	Rana temporaria	Common Frog	0	1	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Taraxacum officinale agg.	Dandelion	0	0	0
SE244030	St.John's School Penistone	pond area	21/09/2012	bony fish (Actinopterygii)	Cyprinus carpio	Carp	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Tripleurospermum maritimum agg.	Scentless Mayweed agg.	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Origanum vulgare	Wild Marjoram	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Cirsium vulgare	Spear Thistle	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Sambucus nigra	Elder	0	0	0

SE242040	Penistone Grammar School		21/09/2012	flowering plant	Senecio vulgaris	Groundsel	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Senecio vulgaris	Groundsel	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Cirsium arvense	Creeping Thistle	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Mentha aquatica	Water Mint	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Mentha aquatica	Water Mint	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Teucrium scorodonia	Wood Sage	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Buddleja davidii	Butterfly-Bush	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Sonchus arvensis	Perennial Sow-Thistle	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Aesculus hippocastanum	Horse-Chestnut	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Rumex obtusifolius	Broad-Leaved Dock	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Myosotis scorpioides	Water Forget-Me-Not	0	0	0

SE242040	Penistone Grammar School		21/09/2012	flowering plant	Plantago lanceolata	Ribwort Plantain	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Rumex acetosa	Common Sorrel	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Hedera helix	Ivy	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Persicaria maculosa	Redshank	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Persicaria maculosa	Redshank	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Betula	Birch	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Alnus glutinosa	Alder	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Pentaglottis sempervirens	Green Alkanet	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Bellis perennis	Daisy	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Anthriscus sylvestris	Cow Parsley	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Urtica dioica	Common Nettle	0	0	0

SE242040	Penistone Grammar School		21/09/2012	flowering plant	Verbascum	Mullein	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Aegopodium podagraria	Ground-Elder	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Fraxinus excelsior	Ash	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Quercus petraea	Sessile Oak	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Salix	Sallow	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Trifolium repens	White Clover	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Agrimonia eupatoria	Agrimony	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Corylus avellana	Hazel	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Betula pendula	Silver Birch	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Sorbus aucuparia	Rowan	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Fagus sylvatica	Beech	0	0	0

SE242040	Penistone Grammar School		21/09/2012	flowering plant	Crataegus monogyna	Hawthorn	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Rubus fruticosus agg.	Bramble	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Acer pseudoplatanus	Sycamore	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Acer pseudoplatanus	Sycamore	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Nymphaea alba	White Water-Lily	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Brassica	Cabbage	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Cerastium fontanum	Common Mouse-Ear	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Silene latifolia	White Campion	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Tilia x vulgaris	Tilia x vulgaris	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Cytisus scoparius	Broom	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Ranunculus repens	Creeping Buttercup	0	0	0

SE242040	Penistone Grammar School		21/09/2012	flowering plant	Papaver rhoeas	Common Poppy	0	0	0
SE242040	Penistone Grammar School		21/09/2012	flowering plant	Iris pseudacorus	Yellow Iris	0	0	0
SE242040	Penistone Grammar School		21/09/2012	bird	Erithacus rubecula	Robin	0	0	0
SE242040	Penistone Grammar School		21/09/2012	bird	Carduelis carduelis	Goldfinch	0	0	1
SE242040	Penistone Grammar School		21/09/2012	bird	Passer domesticus	House Sparrow	1	0	1
SE242040	Penistone Grammar School		21/09/2012	bird	Turdus merula	Blackbird	0	0	1
SE244030	St John's School Penistone	pond area	21/09/2012	bird	Turdus merula	Blackbird	0	0	1
SE244030	St John's School Penistone	pond area	21/09/2012	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE242040	Penistone Grammar School		21/09/2012	bird	Columba palumbus	Woodpigeon	0	0	0
SE242040	Penistone Grammar School		21/09/2012	bird	Corvus monedula	Jackdaw	0	0	0
SE242040	Penistone Grammar School		21/09/2012	spider (Araneae)	Pirata	Pirata	0	0	0

SE242040	Penistone Grammar School		21/09/2012	insect - true bug (Hemiptera)	Corixa	Corixa	0	0	0
SE242040	Penistone Grammar School		21/09/2012	insect - true bug (Hemiptera)	Aphididae	Indet. Aphid	0	0	0
SE242040	Penistone Grammar School		21/09/2012	bird	Corvus corone	Carrion Crow	0	0	0
SE242040	Penistone Grammar School		21/09/2012	insect - true bug (Hemiptera)	Gerris	Pondskater	0	0	0
SE244030	St John's School Penistone	pond area	21/09/2012	flowering plant	Juncus	Rush	0	0	0
SE242040	Penistone Grammar School		21/09/2012	moss	Brachythecium rutabulum	Rough-stalked Feather-moss	0	0	0
SE244030	St.John's School Penistone	pond area	21/09/2012	annelid	Lumbricus terrestris	Common Earthworm	0	0	0
SE244030	St.John's School Penistone	pond area	21/09/2012	insect - beetle (Coleoptera)	Harmonia axyridis	Harlequin Ladybird	0	0	0
SE239036	'BARNSLEY MBC'	W of leisure centre River Don south bank	26/04/2012	flowering plant	Lamiastrum galeobdolon subsp. argentatum	Yellow Archangel			
SE239036	'BARNSLEY MBC'	W of leisure centre River Don south bank	26/04/2012	flowering plant	Lamiastrum galeobdolon subsp. galeobdolon	Yellow Archangel			

SE241037	Penistone	A628	24/03/2012	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE247043	Penistone	Well House Ln	23/03/2012	bird	Sturnus vulgaris	Starling	0	0	1
SE248045	Penistone	Well House Lane	02/03/2012	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE247042	Penistone	Well House Lane	23/02/2012	bird	Sturnus vulgaris	Starling	0	0	1
SE248045	Penistone	Well Ho Ln	11/02/2012	bird	Falco tinnunculus	Kestrel	0	0	1
SE248045	Penistone	Well Ho Ln	27/01/2012	bird	Falco tinnunculus	Kestrel	0	0	1
SE247034	Penistone	Trans Pennine Trail	18/01/2012	terrestrial mammal	Vulpes vulpes	Fox	0	0	0
SE255041	Penistone	Barnsley Road	14/11/2011	bird	Lagopus lagopus	Red Grouse	0	0	1
SE2403	'BARNSLEY MBC'	Penistone old gardens	09/08/2011	insect - butterfly	Pieris rapae	Small White	0	0	0
SE2404	'BARNSLEY MBC'	Penistone Grammar School	09/08/2011	insect - moth	Noctua pronuba	Large Yellow Underwing	0	0	0
SE2403	'BARNSLEY MBC'	Penistone old gardens	09/08/2011	insect - butterfly	Maniola jurtina	Meadow Brown	0	0	0
SE2403	'BARNSLEY MBC'	Penistone old gardens	09/08/2011	insect - butterfly	Pieris napi	Green-Veined White	0	0	0
SE2403	'BARNSLEY MBC'	Penistone old gardens	09/08/2011	insect - butterfly	Pyronia tithonus	Hedge Brown	0	0	0
SE2404	'BARNSLEY MBC'	Penistone Grammar School	14/07/2011	insect - butterfly	Pieris rapae	Small White	0	0	0
SE2404	'BARNSLEY MBC'	Penistone Grammar School	14/07/2011	insect - butterfly	Vanessa atalanta	Red Admiral	0	0	0
SE2404	'BARNSLEY MBC'	Penistone Grammar School	14/07/2011	insect - butterfly	Aglais urticae	Small Tortoiseshell	0	0	0

SE2404	'BARNSLEY MBC'	Penistone Grammar School	14/07/2011	insect - butterfly	Maniola jurtina	Meadow Brown	0	0	0
SE2403	'BARNSLEY MBC'	Penistone roadside	04/07/2011	insect - butterfly	Pieris rapae	Small White	0	0	0
SE243049	Ingbirchworth		19/05/2011	bird	Columba oenas	Stock Dove	0	0	1
SE243049	'BARNSLEY MBC'	Ingbirchworth	19/05/2011	bird	Columba oenas	Stock Dove	0	0	1
SE246049	Ingbirchworth		19/05/2011	bird	Falco tinnunculus	Kestrel	0	0	1
SE246049	'BARNSLEY MBC'	Ingbirchworth	19/05/2011	bird	Falco tinnunculus	Kestrel	0	0	1
SE243048	'BARNSLEY MBC'	Westhorpe Scout Dyke	01/01/2011	bird	Columba oenas	Stock Dove	0	0	1
SE246049	'BARNSLEY MBC'	Westhorpe Scout Dyke	01/01/2011	bird	Falco tinnunculus	Kestrel	0	0	1
SE239039	'BARNSLEY MBC'	field N. of Work Bank Lane	11/09/2008	insect - true bug (Hemiptera)	Plagiognathus chrysanthemi	Plagiognathus chrysanthemi	0	0	0
SE239039	'BARNSLEY MBC'	field N. of Work Bank Lane	11/09/2008	insect - true bug (Hemiptera)	Plagiognathus arbustorum	Plagiognathus arbustorum	0	0	0
SE239039	'BARNSLEY MBC'	field N. of Work Bank Lane	11/09/2008	insect - true bug (Hemiptera)	Dicyphus annulatus	Dicyphus annulatus	0	0	0
SE239039	'BARNSLEY MBC'	field N. of Work Bank Lane	11/09/2008	insect - true bug (Hemiptera)	Deraeocoris lutescens	Deraeocoris lutescens	0	0	0
SE239039	'BARNSLEY MBC'	field N. of Work Bank Lane	11/09/2008	insect - true bug (Hemiptera)	Lygus rugulipennis	European Tarnished Plant Bug	0	0	0
SE2403	'BARNSLEY MBC'	field N. of Work Bank	11/09/2008	insect - true bug (Hemiptera)	Palomena prasina	Green Shieldbug	0	0	0

		Lane							
SE239039	'BARNSLEY MBC'	field N. of Work Bank Lane	11/09/2008	insect - true bug (Hemiptera)	Nabicula limbata	Marsh Damselbug	0	0	0
SE2403		Tennyson Close Penistone, Barnsley MDC	31/07/2008	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	0	1	0
SE2404		Penistone Grammar School, Barnsley MDC	16/04/2008	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	0	1	0
SE2404	Penistone		30/03/2007	moss	Brachythecium albicans	Whitish Feather-moss	0	0	0
SE2403	Penistone		15/03/2007	moss	Rhynchostegium confertum	Clustered Feather-moss	0	0	0
SE2403	Penistone		15/03/2007	moss	Orthotrichum diaphanum	White-tipped Bristle-moss	0	0	0
SE2403	Penistone		15/03/2007	moss	Bryum capillare	Capillary Thread-moss	0	0	0
SE2403	Penistone		15/03/2007	moss	Tortula muralis	Wall Screw-moss	0	0	0
SE2403	Penistone		15/03/2007	moss	Hypnum cupressiforme var. cupressiforme	Hypnum cupressiforme var. cupressiforme			
SE2403	Penistone		15/03/2007	moss	Ceratodon purpureus	Redshank	0	0	0
SE2403	Penistone		15/03/2007	moss	Dicranoweisia cirrata	Common Pincushion	0	0	0
SE2403	Penistone		15/03/2007	moss	Atrichum undulatum	Common Smoothcap	0	0	0

SE2403	Penistone		15/03/2007	moss	Rhytidiadelphus squarrosus	Springy Turf-moss	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	24/09/2003	insect - beetle (Coleoptera)	Elmis aenea	Elmis aenea	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	24/09/2003	insect - beetle (Coleoptera)	Brychius elevatus	Brychius elevatus	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	24/09/2003	insect - beetle (Coleoptera)	Limnius volckmari	Limnius volckmari	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	16/05/2003	insect - beetle (Coleoptera)	Elmis aenea	Elmis aenea	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	16/05/2003	insect - beetle (Coleoptera)	Limnius volckmari	Limnius volckmari	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	16/05/2003	insect - beetle (Coleoptera)	Oreodytes sanmarki	Oreodytes sanmarki	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	03/10/2001	insect - beetle (Coleoptera)	Elmis aenea	Elmis aenea	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	03/10/2001	insect - beetle (Coleoptera)	Oreodytes sanmarki	Oreodytes sanmarki	0	0	0
SE249039	Penistone	Rydal Close, 6	28/06/2001	terrestrial mammal	Chiroptera	Bats	0	0	0
SE2404	Water Hall Park, Penistone		01/03/2001	bird	Sylvia curruca	Lesser Whitethroat	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N	19/05/2000	insect - beetle (Coleoptera)	Elmis aenea	Elmis aenea	0	0	0

		of Penistone							
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	19/05/2000	insect - beetle (Coleoptera)	Brychius elevatus	Brychius elevatus	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	19/05/2000	insect - beetle (Coleoptera)	Nebrioporus depressus subsp. elegans	Nebrioporus depressus subsp. elegans	0	0	0
SE239044	'BARNSLEY MBC'	Scout Dike, u/s Scout Bridge, N of Penistone	19/05/2000	insect - beetle (Coleoptera)	Oreodytes sanmarki	Oreodytes sanmarki	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/2000	bird	Streptopelia decaocto	Collared Dove	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/2000	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/2000	bird	Turdus viscivorus	Mistle Thrush	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/2000	bird	Carduelis spinus	Siskin	0	0	0
SE2403	garden Watersmeet,		01/01/2000	bird	Certhia familiaris	Treecreeper	0	0	0

	Water Hall Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1999	bird	Streptopelia decaocto	Collared Dove	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		01/12/1999	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1999	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1999	bird	Regulus regulus	Goldcrest	0	0	1
SE2403	River Don, Water Hall Bridge, Penistone		01/11/1999	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/11/1999	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	River Don, Water Hall		01/11/1999	bird	Cinclus cinclus	Dipper	0	0	0

	Bridge, Penistone								
SE2403	Water Hall Lane, Penistone		01/11/1999	bird	Falco tinnunculus	Kestrel	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/11/1999	bird	Strix aluco	Tawny Owl	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/11/1999	bird	Picus viridis	Green Woodpecker	0	0	1
SE246038	'BARNSLEY MBC'	Scout Dike, Water Hall, Penistone	14/10/1999	insect - beetle (Coleoptera)	Oulimnius tuberculatus	Oulimnius tuberculatus	0	0	0
SE246038	'BARNSLEY MBC'	Scout Dike, Water Hall, Penistone	14/10/1999	insect - beetle (Coleoptera)	Elmis aenea	Elmis aenea	0	0	0
SE246038	'BARNSLEY MBC'	Scout Dike, Water Hall, Penistone	14/10/1999	insect - beetle (Coleoptera)	Elmis aenea	Elmis aenea	0	0	0
SE247037	'BARNSLEY MBC'	River Don, Water Hall, Penistone	14/10/1999	insect - beetle (Coleoptera)	Limnius volckmari	Limnius volckmari	0	0	0
SE246038	'BARNSLEY MBC'	Scout Dike, Water Hall, Penistone	14/10/1999	insect - beetle (Coleoptera)	Limnius volckmari	Limnius volckmari	0	0	0
SE246038	'BARNSLEY MBC'	Scout Dike, Water Hall, Penistone	14/10/1999	insect - beetle (Coleoptera)	Limnius volckmari	Limnius volckmari	0	0	0

SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/10/1999	bird	Strix aluco	Tawny Owl	0	0	0
SE240037	Wellhouse Lane, Penistone		01/08/1999	bird	Hirundo rustica	Swallow	0	0	1
SE2403	Penistone Town		01/08/1999	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		21/07/1999	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	River Don, Water Hall Bridge, Penistone		21/07/1999	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		17/07/1999	bird	Motacilla cinerea	Grey Wagtail	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		06/07/1999	bird	Turdus philomelos	Song Thrush	0	0	1
SE2403	Water Hall Lane, Penistone		01/07/1999	bird	Picus viridis	Green Woodpecker	0	0	1
SE247037	garden Watersmeet, Water Hall		24/06/1999	bird	Picus viridis	Green Woodpecker	0	0	1

	Lane, Penistone								
SE247037	garden Watersmeet, Water Hall Lane, Penistone		01/06/1999	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE247037	garden Watersmeet, Water Hall Lane, Penistone		01/06/1999	bird	Phylloscopus collybita	Chiffchaff	0	0	0
SE247037	River Don, Water Hall Bridge, Penistone		01/06/1999	bird	Motacilla cinerea	Grey Wagtail	0	0	1
SE247037	garden Watersmeet, Water Hall Lane, Penistone		01/06/1999	bird	Passer domesticus	House Sparrow	1	0	1
SE247037	garden Watersmeet, Water Hall Lane, Penistone		01/06/1999	bird	Turdus philomelos	Song Thrush	0	0	1
SE247037	garden Watersmeet, Water Hall Lane, Penistone		01/06/1999	bird	Strix aluco	Tawny Owl	0	0	0
SE247037	garden Watersmeet,		01/06/1999	bird	Parus caeruleus	Blue Tit	0	0	0

	Water Hall Lane, Penistone								
SE247037	garden Watersmeet, Water Hall Lane, Penistone		01/06/1999	bird	Certhia familiaris	Treecreeper	0	0	0
SE247037	River Don, Water Hall Bridge, Penistone		01/06/1999	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		25/05/1999	bird	Anas platyrhynchos	Mallard	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		07/05/1999	bird	Muscicapa striata	Spotted Flycatcher	1	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/05/1999	bird	Turdus philomelos	Song Thrush	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/05/1999	bird	Fringilla coelebs	Chaffinch	0	0	0
SE2403	garden Watersmeet,		01/05/1999	bird	Pica pica	Magpie	0	0	0

	Water Hall Lane, Penistone								
SE246037	Water Hall Lane, Penistone		28/03/1999	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE246037	Water Hall Lane, Penistone		28/03/1999	bird	Garrulus glandarius	Jay	0	0	0
SE246037	Water Hall Lane, Penistone		28/03/1999	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/02/1999	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/02/1999	bird	Branta canadensis	Canada Goose	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/02/1999	bird	Carduelis spinus	Siskin	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/02/1999	bird	Parus ater	Coal Tit	0	0	0

SE2403	River Don, Water Hall Bridge, Penistone		01/02/1999	bird	Gallinula chloropus	Moorhen	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/02/1999	bird	Garrulus glandarius	Jay	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/02/1999	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/02/1999	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1998	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1998	bird	Parus ater	Coal Tit	0	0	0
SE2403	garden Watersmeet, Water Hall Lane,		01/12/1998	bird	Regulus regulus	Goldcrest	0	0	1

	Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1998	bird	Garrulus glandarius	Jay	0	0	0
SE248038	garden Watersmeet, Water Hall Lane, Penistone		01/10/1998	bird	Carduelis spinus	Siskin	0	0	0
SE248038	Water Hall Park, Penistone		01/10/1998	bird	Regulus regulus	Goldcrest	0	0	1
SE248038	garden Watersmeet, Water Hall Lane, Penistone		01/10/1998	bird	Garrulus glandarius	Jay	0	0	0
SE246038	'BARNSLEY MBC'	Scout Dike, Water Hall, Penistone	29/05/1998	insect - beetle (Coleoptera)	Hydraena gracilis	Hydraena gracilis	0	0	0
SE246038	'BARNSLEY MBC'	Scout Dike, Water Hall, Penistone	29/05/1998	insect - beetle (Coleoptera)	Elmis aenea	Elmis aenea	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		10/05/1998	bird	Sylvia borin	Garden Warbler	0	0	0
SE2403	garden Watersmeet, Water Hall		03/05/1998	bird	Turdus philomelos	Song Thrush	0	0	1

	Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/05/1998	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/05/1998	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	River Don, Water Hall Bridge, Penistone		01/05/1998	bird	Gallinula chloropus	Moorhen	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/05/1998	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		01/05/1998	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		30/04/1998	bird	Carduelis carduelis	Goldfinch	0	0	1
SE2403	garden Watersmeet, Water Hall		30/04/1998	bird	Turdus philomelos	Song Thrush	0	0	1

	Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		28/04/1998	bird	Turdus philomelos	Song Thrush	0	0	1
SE2403	Water Hall Lane, Penistone		27/04/1998	bird	Phylloscopus trochilus	Willow Warbler	0	0	1
SE2403	Penistone Town	Wellhouse Lane	25/04/1998	bird	Hirundo rustica	Swallow	0	0	1
SE2403	Water Hall Lane, Penistone		06/04/1998	bird	Turdus viscivorus	Mistle Thrush	0	0	1
SE2403	River Don, Water Hall Bridge, Penistone		01/03/1998	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		01/03/1998	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	Water Hall Lane, Penistone		01/03/1998	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		01/03/1998	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		31/01/1998	bird	Accipiter nisus	Sparrowhawk	0	0	0

SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/1998	flowering plant	Alnus glutinosa	Alder	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/1998	bird	Carduelis spinus	Siskin	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/1998	bird	Falco tinnunculus	Kestrel	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		26/12/1997	flowering plant	Alnus glutinosa	Alder	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		26/12/1997	bird	Columba oenas	Stock Dove	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		26/12/1997	bird	Carduelis spinus	Siskin	0	0	0
SE2403	garden Watersmeet, Water Hall		01/11/1997	bird	Passer domesticus	House Sparrow	1	0	1

	Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/11/1997	bird	Fringilla coelebs	Chaffinch	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/11/1997	bird	Carduelis chloris	Greenfinch	0	0	0
SE2403	River Don, Penistone		01/11/1997	bird	Ardea cinerea	Grey Heron	0	0	0
SE2404	Don Valley, Oxspring to Penistone		29/10/1997	bird	Turdus pilaris	Fieldfare	0	1	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		23/10/1997	bird	Regulus regulus	Goldcrest	0	0	1
SE2403	Don Valley, Oxspring to Penistone		20/09/1997	bird	Hirundo rustica	Swallow	0	0	1
SE2403	Water Hall Lane, Penistone		20/09/1997	bird	Parus ater	Coal Tit	0	0	0
SE2403	Don Valley, Oxspring to Penistone		20/09/1997	bird	Falco tinnunculus	Kestrel	0	0	1
SE2403	River Don, Oxspring to		18/09/1997	bird	Ardea cinerea	Grey Heron	0	0	0

	Penistone								
SE2403	Don Valley, Oxspring to Penistone		01/08/1997	bird	Hirundo rustica	Swallow	0	0	1
SE2403	Water Hall Lane, Penistone		01/08/1997	bird	Picus viridis	Green Woodpecker	0	0	1
SE248038	Penistone	7 Windermere Road	13/07/1997	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	0	1	0
SE2403	River Don, Water Hall Bridge, Penistone		01/07/1997	bird	Gallinula chloropus	Moorhen	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/07/1997	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/07/1997	bird	Parus caeruleus	Blue Tit	0	0	0
SE2403	Water Hall Lane, Penistone		01/07/1997	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		25/06/1997	bird	Dendrocopos minor	Lesser Spotted Woodpecker	0	0	1
SE2403	garden		13/06/1997	flowering plant	Fraxinus excelsior	Ash	0	0	0

	Watersmeet, Water Hall Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		13/06/1997	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		12/06/1997	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/06/1997	bird	Sylvia atricapilla	Blackcap	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/06/1997	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		29/05/1997	bird	Cuculus canorus	Cuckoo	1	0	1
SE2403	River Don, Water Hall Bridge, Penistone		10/05/1997	bird	Alcedo atthis	Kingfisher	0	1	1

SE2404	Don Valley, Oxspring to Penistone		10/05/1997	bird	Vanellus vanellus	Lapwing	1	0	1
SE2403	Water Hall Lane, Penistone		10/05/1997	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	Water Hall Lane, Penistone		01/05/1997	bird	Sylvia atricapilla	Blackcap	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		30/04/1997	bird	Gallinula chloropus	Moorhen	0	0	0
SE2403	Water Hall Lane, Penistone		20/04/1997	bird	Phylloscopus trochilus	Willow Warbler	0	0	1
SE2403	Water Hall Lane, Penistone		20/04/1997	bird	Sylvia atricapilla	Blackcap	0	0	0
SE2404	Don Valley, Penistone to Dunford Bridge		29/03/1997	bird	Vanellus vanellus	Lapwing	1	0	1
SE2404	Water Hall Lane, Penistone		24/03/1997	bird	Carduelis spinus	Siskin	0	0	0
SE2404	Water Hall Lane, Penistone		01/03/1997	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	Water Hall Lane, Penistone		04/02/1997	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	Water Hall Lane,		03/02/1997	bird	Pyrrhula pyrrhula	Bullfinch	0	0	1

	Penistone								
SE2403	Water Hall Lane, Penistone		01/02/1997	bird	Fringilla montifringilla	Brambling	0	1	1
SE2403	Water Hall Lane, Penistone		01/02/1997	bird	Columba oenas	Stock Dove	0	0	1
SE2403	Water Hall Lane, Penistone		01/02/1997	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Water Hall Lane, Penistone		01/02/1997	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	Water Hall Lane, Penistone		01/02/1997	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		21/01/1997	bird	Erithacus rubecula	Robin	0	0	0
SE2403	Water Hall Lane, Penistone		16/01/1997	bird	Turdus viscivorus	Mistle Thrush	0	0	1
SE2403	Water Hall Lane, Penistone		01/01/1997	flowering plant	Alnus glutinosa	Alder	0	0	0
SE2403	Water Hall Lane, Penistone		01/01/1997	bird	Columba oenas	Stock Dove	0	0	1
SE2403	Water Hall Lane, Penistone		01/01/1997	bird	Branta canadensis	Canada Goose	0	0	0
SE2403	garden		01/01/1997	bird	Muscicapa striata	Spotted	1	0	1

	Watersmeet, Water Hall Lane, Penistone					Flycatcher			
SE2403	Water Hall Lane, Penistone		01/01/1997	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Water Hall Lane, Penistone		01/01/1997	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	Water Hall Lane, Penistone		01/01/1997	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		01/01/1997	bird	Carduelis chloris	Greenfinch	0	0	0
SE2404	Water Hall Lane, Penistone		29/12/1996	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Water Hall Lane, Penistone		01/12/1996	bird	Sylvia atricapilla	Blackcap	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		29/11/1996	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		29/11/1996	bird	Strix aluco	Tawny Owl	0	0	0
SE2403	Water Hall Lane, Penistone		01/11/1996	bird	Fringilla coelebs	Chaffinch	0	0	0

SE2403	Don Valley, Oxspring to Penistone		31/10/1996	bird	Falco tinnunculus	Kestrel	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		26/10/1996	bird	Strix aluco	Tawny Owl	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		22/10/1996	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		21/10/1996	bird	Streptopelia decaocto	Collared Dove	0	0	0
SE2403	Water Hall Lane, Penistone		21/10/1996	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/10/1996	flowering plant	Sorbus aucuparia	Rowan	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/10/1996	bird	Turdus merula	Blackbird	0	0	1
SE2403	River Don, Water Hall Bridge, Penistone		01/10/1996	bird	Ardea cinerea	Grey Heron	0	0	0

SE243030	84 Park Avenue, Council Estate, Penistone Town		13/09/1996	bird	Hirundo rustica	Swallow	0	0	1
SE243030	84 Park Avenue, Council Estate, Penistone Town		10/09/1996	bird	Apus apus	Swift	0	0	0
SE243030	84 Park Avenue, Council Estate, Penistone Town		09/09/1996	bird	Branta canadensis	Canada Goose	0	0	0
SE243030	84 Park Avenue, Council Estate, Penistone Town		01/09/1996	bird	Sturnus vulgaris	Starling	0	0	1
SE243030	84 Park Avenue, Council Estate, Penistone Town		01/09/1996	bird	Delichon urbica	House Martin	0	0	1
SE243030	Penistone Town		25/08/1996	bird	Branta canadensis	Canada Goose	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		25/08/1996	bird	Falco tinnunculus	Kestrel	0	0	1
SE2403	garden		13/08/1996	bird	Accipiter nisus	Sparrowhawk	0	0	0

	Watersmeet, Water Hall Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		12/08/1996	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Streptopelia decaocto	Collared Dove	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Streptopelia decaocto	Collared Dove	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Erithacus rubecula	Robin	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Prunella modularis	Dunnock	0	0	1
SE2403	garden Watersmeet, Water Hall Lane,		01/08/1996	bird	Passer domesticus	House Sparrow	1	0	1

	Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Turdus merula	Blackbird	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Fringilla coelebs	Chaffinch	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1996	bird	Parus caeruleus	Blue Tit	0	0	0
SE2403	Water Hall Lane, Penistone		30/07/1996	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	Water Hall Lane, Penistone		13/07/1996	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		06/07/1996	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	Water Hall Lane,		13/06/1996	bird	Certhia familiaris	Treecreeper	0	0	0

	Penistone								
SE2403	River Don, Water Hall Bridge, Penistone		08/06/1996	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		02/06/1996	bird	Muscicapa striata	Spotted Flycatcher	1	0	1
SE2403	Water Hall, Penistone		01/06/1996	bird	Hirundo rustica	Swallow	0	0	1
SE2403	River Don, Water Hall Bridge, Penistone		01/06/1996	bird	Gallinula chloropus	Moorhen	0	0	0
SE243035	Water Hall Lane, Penistone		30/05/1996	bird	Muscicapa striata	Spotted Flycatcher	1	0	1
SE243035	Water Hall Park, Penistone		28/05/1996	bird	Cuculus canorus	Cuckoo	1	0	1
SE243030	84 Park Avenue, Council Estate, Penistone Town		25/05/1996	bird	Apus apus	Swift	0	0	0
SE243030	84 Park Avenue, Council Estate, Penistone Town		25/05/1996	bird	Carduelis chloris	Greenfinch	0	0	0
SE243035	River Don, Water Hall Bridge,		20/05/1996	bird	Alcedo atthis	Kingfisher	0	1	1

	Penistone								
SE243030	84 Park Avenue, Council Estate, Penistone Town		11/05/1996	bird	Carduelis carduelis	Goldfinch	0	0	1
SE245035	Water Hall Lane, Penistone		10/05/1996	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		07/05/1996	bird	Gallinula chloropus	Moorhen	0	0	0
SE243035	Water Hall Lane, Penistone		01/05/1996	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE243035	Water Hall Lane, Penistone		01/05/1996	bird	Columba oenas	Stock Dove	0	0	1
SE243035	Water Hall Lane, Penistone		01/05/1996	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE243035	River Don, Water Hall Bridge, Penistone		01/05/1996	bird	Gallinula chloropus	Moorhen	0	0	0
SE243035	Water Hall Lane, Penistone		01/05/1996	bird	Parus caeruleus	Blue Tit	0	0	0
SE247037	Water Hall Lane, Penistone		20/04/1996	bird	Phylloscopus trochilus	Willow Warbler	0	0	1

SE247037	Water Hall Lane, Penistone		17/04/1996	bird	Carduelis carduelis	Goldfinch	0	0	1
SE247037	Water Hall Lane, Penistone		12/04/1996	bird	Turdus iliacus	Redwing	0	1	1
SE247037	Water Hall Lane, Penistone		10/04/1996	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE247037	garden Watersmeet, Water Hall Lane, Penistone		01/04/1996	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE247037	Water Hall Lane, Penistone		01/04/1996	bird	Columba oenas	Stock Dove	0	0	1
SE243043	Hartcliff nr Penistone		28/03/1996	bird	Vanellus vanellus	Lapwing	1	0	1
SE2403	Water Hall Lane, Penistone		03/03/1996	bird	Sylvia atricapilla	Blackcap	0	0	0
SE2403	Water Hall Lane, Penistone		01/03/1996	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	Water Hall Lane, Penistone		01/03/1996	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	Water Hall Lane, Penistone		01/03/1996	bird	Turdus viscivorus	Mistle Thrush	0	0	1
SE2403	Water Hall Lane,		01/03/1996	bird	Columba oenas	Stock Dove	0	0	1

	Penistone								
SE2403	Water Hall Lane, Penistone		01/03/1996	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Water Hall Lane, Penistone		01/03/1996	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	River Don, Water Hall Bridge, Penistone		19/02/1996	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		18/02/1996	bird	Turdus philomelos	Song Thrush	0	0	1
SE2403	Water Hall Lane, Penistone		17/02/1996	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	Water Hall Lane, Penistone		10/02/1996	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Water Hall Lane, Penistone		03/02/1996	bird	Fringilla montifringilla	Brambling	0	1	1
SE2403	Water Hall Lane, Penistone		03/02/1996	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	Water Hall Lane, Penistone		03/02/1996	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	garden Watersmeet, Water Hall		30/01/1996	bird	Turdus viscivorus	Mistle Thrush	0	0	1

	Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		20/01/1996	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE243043	garden Watersmeet, Water Hall Lane, Penistone		01/01/1996	bird	Erithacus rubecula	Robin	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/01/1996	bird	Prunella modularis	Dunnock	0	0	1
SE243043	garden Watersmeet, Water Hall Lane, Penistone		01/01/1996	bird	Turdus merula	Blackbird	0	0	1
SE243043	garden Watersmeet, Water Hall Lane, Penistone		01/01/1996	bird	Fringilla coelebs	Chaffinch	0	0	0
SE243043	garden Watersmeet, Water Hall Lane, Penistone		01/01/1996	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	garden		27/12/1995	bird	Branta canadensis	Canada Goose	0	0	0

	Watersmeet, Water Hall Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		26/12/1995	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		26/12/1995	bird	Carduelis spinus	Siskin	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		26/12/1995	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		19/12/1995	bird	Turdus viscivorus	Mistle Thrush	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		19/12/1995	bird	Vanellus vanellus	Lapwing	1	0	1
SE2403	garden Watersmeet, Water Hall Lane,		01/12/1995	bird	Corvus corone subsp. corone	Carrion Crow	0	0	0

	Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Erithacus rubecula	Robin	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Prunella modularis	Dunnock	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Passer domesticus	House Sparrow	1	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Gallinula chloropus	Moorhen	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Turdus merula	Blackbird	0	0	1
SE2403	garden Watersmeet,		01/12/1995	bird	Fringilla coelebs	Chaffinch	0	0	0

	Water Hall Lane, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Parus major	Great Tit	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Parus caeruleus	Blue Tit	0	0	0
SE243043	River Don, Water Hall Bridge, Penistone		01/12/1995	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/12/1995	bird	Pica pica	Magpie	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		30/10/1995	bird	Alcedo atthis	Kingfisher	0	1	1
SE243030	Penistone Town		25/10/1995	bird	Vanellus vanellus	Lapwing	1	0	1

SE2403	Water Hall Lane, Penistone		17/10/1995	flowering plant	Alnus glutinosa	Alder	0	0	0
SE2403	Water Hall Lane, Penistone		17/10/1995	bird	Certhia familiaris	Treecreeper	0	0	0
SE243030	Penistone Town		09/10/1995	bird	Hirundo rustica	Swallow	0	0	1
SE2403	River Don, Water Hall Bridge, Penistone		01/10/1995	bird	Ardea cinerea	Grey Heron	0	0	0
SE243030	84 Park Avenue, Council Estate, Penistone Town		11/09/1995	bird	Branta canadensis	Canada Goose	0	0	0
SE243030	84 Park Avenue, Council Estate, Penistone Town		07/09/1995	bird	Branta canadensis	Canada Goose	0	0	0
SE243030	84 Park Avenue, Council Estate, Penistone Town		06/09/1995	bird	Branta canadensis	Canada Goose	0	0	0
SE243030	Park Avenue, Council Estate, Penistone Town		30/08/1995	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	garden Watersmeet,		10/08/1995	bird	Muscicapa striata	Spotted Flycatcher	1	0	1

	Water Hall Lane, Penistone								
SE2403	River Don, Water Hall Bridge, Penistone		01/08/1995	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/08/1995	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/06/1995	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	Water Hall Lane, Penistone		18/05/1995	bird	Carduelis carduelis	Goldfinch	0	0	1
SE243043	Water Hall Lane, Penistone		15/05/1995	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Parmelia sulcata	Parmelia sulcata	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Trapelia placodioides	Trapelia placodioides	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Phaeophyscia orbicularis	Phaeophyscia orbicularis	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora soralifera	Lecanora soralifera	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora epanora	Lecanora epanora	0	0	0

SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora intricata	Lecanora intricata	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora dispersa	Lecanora dispersa	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lepraria incana	Lepraria incana	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Rinodina gennarii	Rinodina gennarii	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora albescens	Lecanora albescens	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Hypogymnia physodes	Hypogymnia physodes	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecidella scabra	Lecidella scabra	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Acarospora fuscata	Acarospora fuscata	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora muralis	Lecanora muralis	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora crenulata	Lecanora crenulata			
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora polytropa	Lecanora polytropa	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Porpidia tuberculosa	Porpidia tuberculosa	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecania erysibe	Lecania erysibe	0	0	0
SE243043	Water Hall Lane, Penistone		06/05/1995	bird	Picus viridis	Green Woodpecker	0	0	1
SE246034	Penistone	churchyard	06/05/1995	lichen	Caloplaca citrina	Caloplaca citrina	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Caloplaca holocarpa	Caloplaca holocarpa	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Caloplaca dalmatica	Caloplaca dalmatica			

SE246034	Penistone	churchyard	06/05/1995	lichen	Candelariella aurella forma aurella	Candelariella aurella forma aurella	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Candelariella vitellina forma vitellina	Candelariella vitellina forma vitellina	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Physcia tenella subsp. tenella	Physcia tenella subsp. tenella			
SE246034	Penistone	churchyard	06/05/1995	lichen	Scoliciosporum umbrinum	Scoliciosporum umbrinum	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Lecanora conizaeoides forma conizaeoides	Lecanora conizaeoides forma conizaeoides	0	0	0
SE246034	Penistone	churchyard	06/05/1995	lichen	Melanelia subaurifera	Melanelixia subaurifera	0	0	0
SE243043	Water Hall Lane, Penistone		05/05/1995	bird	Sylvia atricapilla	Blackcap	0	0	0
SE243043	Water Hall Lane, Penistone		01/05/1995	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE243043	Water Hall Lane, Penistone		01/04/1995	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE243043	Water Hall Lane, Penistone		01/04/1995	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		26/03/1995	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Water Hall		25/03/1995	bird	Carduelis carduelis	Goldfinch	0	0	1

	Lane, Penistone								
SE2403	River Don, Water Hall Bridge, Penistone		19/03/1995	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		01/03/1995	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	Water Hall Lane, Penistone		01/03/1995	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	Water Hall Lane, Penistone		01/03/1995	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		01/03/1995	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		27/02/1995	bird	Emberiza citrinella	Yellowhammer	1	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		27/02/1995	bird	Fringilla coelebs	Chaffinch	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		24/02/1995	bird	Certhia familiaris	Treecreeper	0	0	0

SE2403	Water Hall Park, Penistone		21/02/1995	bird	Parus montanus	Willow Tit	0	0	1
SE2403	Water Hall Park, Penistone		18/02/1995	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		11/02/1995	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		04/02/1995	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	Water Hall Lane, Penistone		03/02/1995	bird	Turdus philomelos	Song Thrush	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		02/02/1995	bird	Picus viridis	Green Woodpecker	0	0	1
SE243043	garden Watersmeet, Water Hall Lane, Penistone		16/01/1995	bird	Streptopelia decaocto	Collared Dove	0	0	0
SE243043	garden Watersmeet, Water Hall Lane, Penistone		16/01/1995	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE240045	fields in vicinity of Scout Dike		12/01/1995	bird	Branta canadensis	Canada Goose	0	0	0

	Reservoir and village								
SE2403	River Don, Water Hall Bridge, Penistone		06/01/1995	bird	Alcedo atthis	Kingfisher	0	1	1
SE243043	River Don, Water Hall Bridge, Penistone		03/01/1995	bird	Ardea cinerea	Grey Heron	0	0	0
SE243043	garden Watersmeet, Water Hall Lane, Penistone		01/01/1995	bird	Picus viridis	Green Woodpecker	0	0	1
SE238036	River Don, Penistone		01/01/1995	bird	Ardea cinerea	Grey Heron	0	0	0
SE2403	Water Hall Lane, Penistone		30/11/1994	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		28/11/1994	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		23/11/1994	bird	Turdus philomelos	Song Thrush	0	0	1
SE2403	Water Hall, Penistone		03/11/1994	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	River Don, Water Hall Bridge, Penistone		28/10/1994	bird	Ardea cinerea	Grey Heron	0	0	0

SE248038	Water Hall, Penistone		25/10/1994	bird	Regulus regulus	Goldcrest	0	0	1
SE248038	River Don, Water Hall Bridge, Penistone		20/10/1994	bird	Alcedo atthis	Kingfisher	0	1	1
SE246038	garden Watersmeet, Water Hall Lane, Penistone		26/09/1994	bird	Certhia familiaris	Treecreeper	0	0	0
SE246038	Water Hall Lane, Penistone		17/09/1994	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		01/09/1994	bird	Gallinula chloropus	Moorhen	0	0	0
SE2403	Scout Dike Reservoir		24/08/1994	bird	Aythya ferina	Pochard	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		24/08/1994	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		22/08/1994	bird	Alcedo atthis	Kingfisher	0	1	1
SE240044	Scout Bridge over Scout Dyke		21/07/1994	bird	Alcedo atthis	Kingfisher	0	1	1

SE2403	River Don, Water Hall Bridge, Penistone		01/07/1994	bird	Motacilla cinerea	Grey Wagtail	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/07/1994	bird	Troglodytes troglodytes	Wren	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/06/1994	bird	Muscicapa striata	Spotted Flycatcher	1	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/06/1994	bird	Troglodytes troglodytes	Wren	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/05/1994	bird	Carduelis carduelis	Goldfinch	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/05/1994	bird	Muscicapa striata	Spotted Flycatcher	1	0	1
SE240044	Scout Dike Reservoir		28/04/1994	bird	Motacilla cinerea	Grey Wagtail	0	0	1
SE2403	River Don, Water Hall		01/03/1994	bird	Alcedo atthis	Kingfisher	0	1	1

	Bridge, Penistone								
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/03/1994	bird	Aegithalos caudatus	Long-Tailed Tit	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/03/1994	bird	Dendrocopos major	Great Spotted Woodpecker	0	0	0
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/03/1994	bird	Carduelis carduelis	Goldfinch	0	0	1
SE2403	garden Watersmeet, Water Hall Lane, Penistone		01/03/1994	bird	Certhia familiaris	Treecreeper	0	0	0
SE2403	Water Hall Lane, Penistone		01/02/1994	bird	Fringilla montifringilla	Brambling	0	1	1
SE2403	River Don, Water Hall Bridge, Penistone		01/02/1994	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	Water Hall Lane, Penistone		01/02/1994	bird	Emberiza citrinella	Yellowhammer	1	0	1

SE2403	River Don, Water Hall Bridge, Penistone		01/01/1994	bird	Anas platyrhynchos	Mallard	0	0	0
SE2403	River Don, Water Hall Bridge, Penistone		01/01/1994	bird	Gallinula chloropus	Moorhen	0	0	0
SE2403	Water Hall Lane, Penistone		01/01/1994	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		01/01/1994	bird	Accipiter nisus	Sparrowhawk	0	0	0
SE2403	Water Hall Lane, Penistone		01/12/1993	bird	Turdus iliacus	Redwing	0	1	1
SE2403	Water Hall Lane, Penistone		01/12/1993	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		01/11/1993	flowering plant	Alnus glutinosa	Alder	0	0	0
SE2403	Water Hall Lane, Penistone		01/11/1993	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Water Hall Lane, Penistone		01/11/1993	bird	Certhia familiaris	Treecreeper	0	0	0
SE247038	River Don, Water Hall Bridge, Penistone		31/10/1993	bird	Alcedo atthis	Kingfisher	0	1	1

SE253043	Don Valley, Oxspring to Penistone		14/10/1993	bird	Vanellus vanellus	Lapwing	1	0	1
SE247038	River Don, Water Hall Bridge, Penistone		01/09/1993	bird	Alcedo atthis	Kingfisher	0	1	1
SE244036	River Don, main road bridge, Bridge End, Penistone		01/09/1993	bird	Alcedo atthis	Kingfisher	0	1	1
SE2403	River Don, Penistone		01/09/1993	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	Water Hall Lane, Penistone		01/09/1993	bird	Picus viridis	Green Woodpecker	0	0	1
SE2403	River Don, Penistone		01/09/1993	bird	Ardea cinerea	Grey Heron	0	0	0
SE247036	Penistone	12 Keats Grove	16/07/1993	terrestrial mammal	Pipistrellus pipistrellus	Pipistrelle	0	1	0
SE247038	Water Hall, Penistone		01/05/1993	bird	Alcedo atthis	Kingfisher	0	1	1
SE243030	Park Avenue, Council Estate, Penistone Town		11/03/1993	bird	Carduelis spinus	Siskin	0	0	0
SE2403	Penistone	Talbot Road, 61	08/02/1993	terrestrial mammal	Chiroptera	Bats	0	0	0

Appendix XIV. HSI INFORMATION.

Great Crested Newt Habitat Suitability Index

May 2010

Background

The Habitat Suitability Index (HSI) for the great crested newt was developed by Oldham *et al.* (2000). HSI scoring systems were originally developed by the US Fish and Wildlife Service as a means of evaluating habitat quality and quantity. An HSI is a numerical index, between 0 and 1. Values close to 0 indicate unsuitable habitat, 1 represents optimal habitat. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors known to affect this species. These ten suitability indices are retained in this current Advice Note.

In the HSI system proposed by Oldham *et al.* (2000) one of the suitability indices (SI_9, terrestrial) involves more lengthy measurement and calculation than the others. In using the HSI system with volunteer surveyors in Kent, Lee Brady has substituted a simpler evaluation of terrestrial habitat quality (a four-point scale), for ease of use.

Several other, local, surveys have utilised the HSI, but incorporating their own variations on the original system. In 2007 a workshop was held at the Herpetofauna Workers' Meeting to evaluate the use of the HSI for the great crested newt, with the aims of:

- Identifying components of the system that may need clarification or refinement
- Agreeing on a standard that can readily be used by volunteers and professionals alike.

The outputs of the workshop and subsequent consultation have been used to formulate the current Advice Note. As far as possible a conservative approach has been adopted in modifying the use of the original HSI suitability indices. However, a major departure is the adoption of Lee Brady's four-point evaluation of terrestrial habitat. This differs from the original HSI in that it has been developed with respect to newt presence/absence at a pond, rather than estimating population size.

Use and limitations of the HSI

The HSI for great crested newts is a measure of habitat suitability. **It is not a substitute for newt surveys.** In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, the system is not sufficiently precise to conclude that any particular pond with a high score will support newts, or that any pond with a low score will not do so.

There is a positive correlation between HSI scores and the numbers of great crested newts observed. In general, high HSI scores are likely to be associated with greater numbers of great crested newts. The relationship is not sufficiently strong, however, to allow estimations of the numbers of newts in any particular pond.

HSI scoring can be useful in:

- Evaluating the general suitability of a pond, or ponds, for great crested newts
- Comparing general suitability of ponds across different areas
- Evaluating the suitability of receptor ponds in a proposed mitigation scheme
- Identifying habitat management priorities.

How to collect data and calculate the HSI

The HSI is a geometric mean of ten suitability indices:

$$HSI = (SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/10}$$

- Ten factors are scored for a pond, in the field and from map work (field scores).
- The ten field scores are converted to SI scores, on a scale from 0.01 to 1 (0.01 is used as the lower end of the scale in stead of 0, because multiplying by 0 reduces all other SI scores to 0).
- The ten SI scores are multiplied together.
- The tenth root of this number is calculated $(x)^{1/10}$ i.e. x to the power of 0.1.

The calculated HSI for a pond should score between 1 and close to 0 (the calculations above do not allow the HSI to be exactly 0).

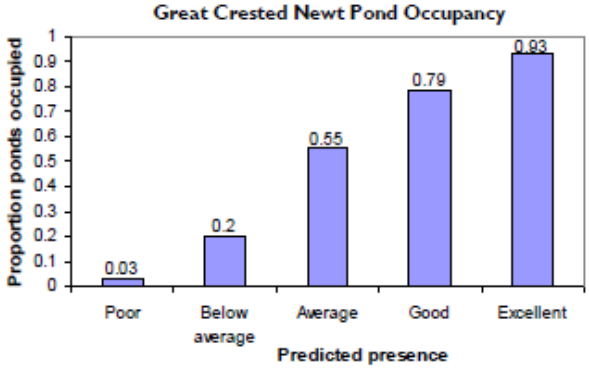
Some of the field scores are categorical, some are numerical. The numerical field scores are converted to SI scores by reading off the values from graphs produced by Oldham *et al.* (2000) reproduced in this Advice Note.

Full details of the scoring system, including descriptions of the criteria used in the categorical scores are given in *Details of suitability indices and definitions of categories* (below). Scores for two of the factors (SI_1 and SI_8) can be gained as desktop/map exercises and so do not have to be completed in the field. The remaining factors should be recorded as field scores, and later converted to suitability indices, in some cases reading SI scores from the graphs provided. A summary of data to collect is given in the appendix *Summary of scoring system*.

Categorisation of HSI scores

Lee Brady has developed a system for using HSI scores to define pond suitability for great crested newts on a categorical scale:

HSI		Pond suitability
< 0.5	=	poor
0.5-0.59	=	below average
0.6-0.69	=	average
0.7-0.79	=	good
> 0.8	=	excellent



The graph shows occupancy of ponds by great crested newts in south-east England. 248 ponds were surveyed on three to six occasions, using egg-searching, torching and bottle-trapping. As pond suitability increases from 'poor' to 'excellent', so does the proportion of ponds occupied by great crested newts.

Details of suitability indices and definitions of categories



Factor 1. Geographic location (SI_1)

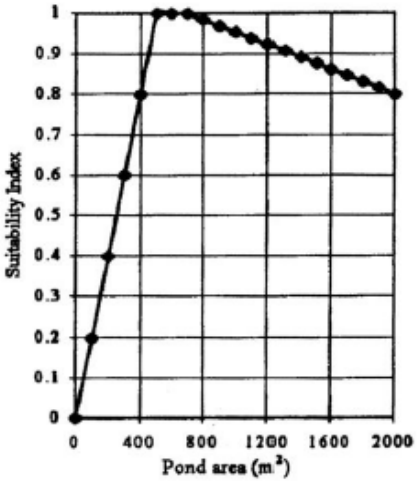
Sites should be scored according to the zone in which they occur. This scoring can be carried out either in the field, or as part of a desktop exercise.

Zone A, location is optimal, SI = 1
Zone B, location is marginal, SI = 0.5
Zone C, location is unsuitable, SI = 0.01.

Some sites will fall on boundary lines between zones. In such cases, select medium-value scores i.e. Zone B.

Factor 2. Pond area

Pond area is the surface area of the pond when water is at its highest level (excluding flooding events). This is usually in the spring. If the pond is being measured at another time of year, the spring time area should still be evident from vegetation types and evidence of a draw down zone around the pond.



Pond area should be measured as accurately as possible. There are several ways of doing this, for example by measuring axes of regularly shaped ponds, either by pacing out in the field, or taking measurements from a map. Irregularly shaped ponds may have to be treated as a series of geometric shapes, calculating the area for each and adding together.

Since it can be difficult reading off SI scores from the graph, pond area should be rounded to the nearest 50 m^2.

It can be particularly difficult to read off SI scores for very small ponds. For ponds smaller than 50 m^2 use a score of 0.05.

For ponds larger than 2000 m^2 omit this factor from the HSI calculation (as there are no data for such large ponds). i.e. $HSI = (SI_1 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/9}$.

Factor 3. Permanence

Pond permanence should be deduced from local knowledge and personal judgement. A landowner may know how often a pond dries. However, if not, the surveyor should make a judgement based on water level at the time of the survey, and taking seasonality into consideration. For example, a pond that is already dry by late spring is likely to dry out every year, etc.

Category	SI	Criteria
Never dries	0.9	Never dries.
Rarely dries	1.0	Dries no more than two years in ten or only in drought.
Sometimes dries	0.5	Dries between three years in ten to most years.
Dries annually	0.1	Dries annually.

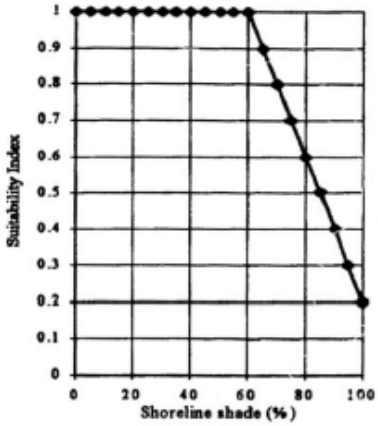
Factor 4. Water quality

The assessment of water quality is subjective and should be based on invertebrate diversity, the presence of submerged water plants and knowledge of the water sources feeding the pond. Water quality should not be confused with water clarity. Sometimes clear water can be devoid of invertebrates, and turbid ponds can support a wealth of invertebrates. There is no quick and simple invertebrate index of water quality. However, some species are indicators of water quality.

Category	SI	Criteria
Good	1.0	Water supports an abundant and diverse invertebrate community. Netting reveals handfuls of diverse invertebrates, including groups such as mayfly larvae and water shrimps.
Moderate	0.67	Moderate invertebrate diversity
Poor	0.33	Low invertebrate diversity (e.g. species such as midge and mosquito larvae). Few submerged plants.
Bad	0.01	Clearly polluted, only pollution-tolerant invertebrates (such as rat-tailed maggots), no submerged plants.

Other cues may also provide information about water quality. For example, ponds subject to agricultural inputs are likely to have poor water quality.

Factor 5. Shade



Estimate percentage pond perimeter shaded, to at least 1m from the shore. Shading is usually from trees, but can include buildings. Shading should not include emergent pond vegetation. The estimate should be made during the period from May to the end of September.

Factor 6. Waterfowl

This factor is concerned with the impact of waterfowl upon the pond and newts. At high densities, as created when waterfowl are encouraged to use a pond by provision of food, the birds can remove all aquatic vegetation, pollute water and persistently stir sediments. Some waterfowl may also actively hunt adult newts and their larvae. Score as one of three categories.

Category	SI	Criteria
Absent	1	No evidence of waterfowl impact (moorhens may be present).
Minor	0.67	Waterfowl present, but little indication of impact on pond vegetation. Pond still supports submerged plants and banks are not denuded of vegetation.
Major	0.01	Severe impact of waterfowl. Little or no evidence of submerged plants, water turbid, pond banks showing patches where vegetation removed, evidence of provisioning waterfowl.

'Waterfowl' includes most water birds, such as ducks, geese and swans. Moorhens should be excluded because almost every pond has at least one or two.

Factor 7. Fish

Information on fish should be gleaned from local knowledge and the surveyor's own observations. Pond owners will usually be aware of stocking with fish for commercial or aesthetic reasons. However, stickleback (which can be significant predators of great crested newt larvae, when present in large numbers) are unlikely to be deliberately introduced to a pond, but may arrive through other means. Netting is useful in detecting smaller fish, such as sticklebacks, or the fry of larger species.

Category	SI	Criteria
Absent	1	No records of fish stocking and no fish revealed by netting or observed by torchlight.
Possible	0.67	No evidence of fish, but local conditions suggest that they may be present.
Minor	0.33	Small numbers of crucian carp, goldfish or stickleback known to be present.
Major	0.01	Dense populations of fish known to be present.

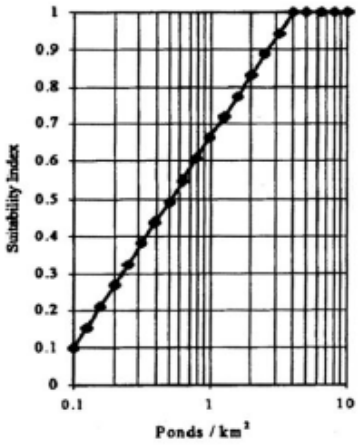
Factor 8. Pond count

This is the number of ponds occurring within 1 km of survey pond. Do not count the survey pond itself. Ponds on the far side of major barriers, such as main roads, should not be counted. Use 1:25,000 scale O.S. data, such as Explorer maps, GIS or web-based mapping sources, such as:

Getamap	www.ordnancesurvey.co.uk/oswebsite/getamap/
Magic	www.magic.gov.uk/site_map.html
Digimap	edina.ac.uk/digimap/

Pond counts can be carried out a by a survey coordinator and so do not necessarily have to be performed by surveyors.

Divide the number of ponds by π (3.14) to calculate the density of ponds per km^2 and read off the SI value from graph.



Factor 9. Terrestrial habitat

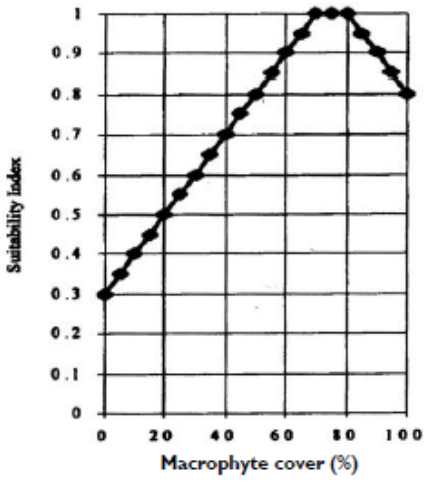
Scoring terrestrial habitat depends on the surveyor's understanding of newt habitat quality. Good terrestrial habitat offers cover and foraging opportunities and includes meadow, rough grassland with tall sward height, scrub, woodland or mature gardens. Terrestrial habitat should be considered within approximately 250 m from the pond, but only on the near side of any major barriers to dispersal (e.g. main roads or large expanses of bare habitat).

Category	SI	Criteria
Good	1	Habitat that offers good opportunities for foraging and shelter (e.g. most semi-natural environments, such as rough grassland, scrub or woodland, also brownfield sites and low intensity farmland) covers more than 75% of available area.
Moderate	0.67	Habitat offers opportunities for foraging and shelter but may not be extensive (25-75%) of available area.
Poor	0.33	Habitat with poor structure (e.g. amenity grassland, improved pasture and arable) that offers limited opportunities (less than 25% of available area) for foraging and shelter.
None	0.01	No suitable habitat around pond (e.g. centre of arable field or large expanse of bare habitat).

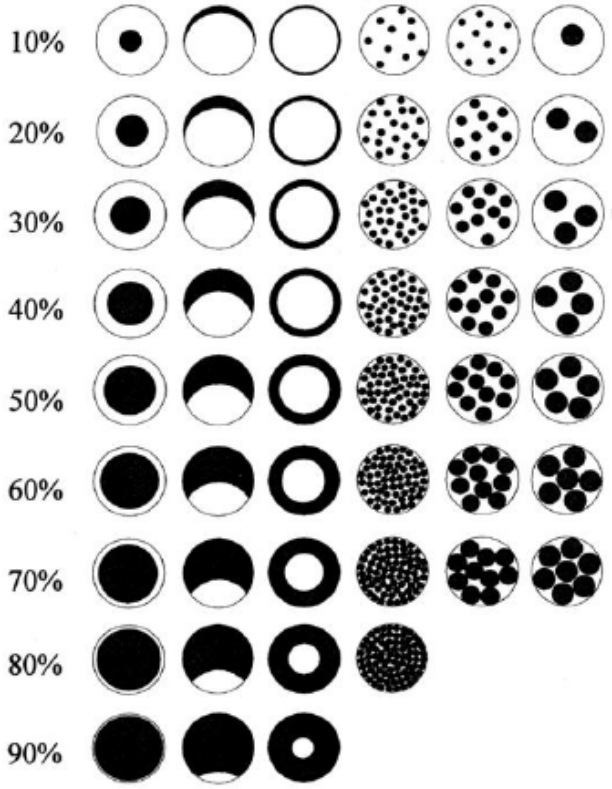
Great crested newts do not have specific terrestrial habitat requirements. However, good quality terrestrial habitat has structure. The presence of hedges, ditches, stone walls, old farm buildings, piles of loose stone or rock, rabbit burrows and small mammal holes all contribute towards 'good' terrestrial habitat. Note that it is rare to encounter a pond falling within the terrestrial habitat category of 'none'.

Factor 10. Macrophytes

Estimate the percentage of the pond surface area occupied by macrophyte cover. This includes emergents, floating plants (excluding duckweed) and submerged plants reaching the surface. Make an estimate between March and the end of September. Read off the SI value from graph.



Guide for assessment of macrophyte cover in a pond
The areas of dark shading simulate a variety of vegetation dispersion patterns.



Reference

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4), 143-155.

This Advice Note is an output from a workshop held at the Herpetofauna Workers' Meeting in January 2007. ARG UK is grateful to Lee Brady, Rob Oldham, David Sewell and John Baker for leading the workshop and/or contributing to this note, and workshop participants for providing useful suggestions. ARG UK is also grateful to the British Herpetological Society for permission to use graphics from the original paper on HSI, published in the *Herpetological Journal*.

This Advice Note can be downloaded from the ARG UK website www.arguk.org and should be cited as: ARG UK (2010). ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.

Publication date: May 2010.

ARG UK is the network of volunteer conservation groups concerned with the native amphibians and reptiles of the UK.

Summary of scoring system

SI_1 Location

Field score	SI
A (optimal)	1
B (marginal)	0.5
C (unsuitable)	0.01

SI_2 Pond area

Field score	SI
Measure pond surface area (m^2) and round to nearest 50 m^2	Read off graph.

SI_3 Pond drying

Field score	SI	Criteria
Never	0.9	Never dries
Rarely	1.0	Dries no more than two years in ten or only in drought.
Sometimes	0.5	Dries between three years in ten to most years
Annually	0.1	Dries annually

SI_4 Water quality

Field score	SI	Criteria
Good	1.0	Abundant and diverse invertebrate community.
Moderate	0.67	Moderate invertebrate diversity
Poor	0.33	Low invertebrate diversity, few submerged plants
Bad	0.01	Clearly polluted, only pollution-tolerant invertebrates, no submerged plants.

SI_5 Shade

Field score	SI
Estimate percentage perimeter shaded to a least 1 m from shore.	Read off graph.

SI_6 Fowl

Field score	SI	Criteria
Absent	1	No evidence of water fowl (although moorhen may be present)
Minor	0.67	Waterfowl present, but little sign of impacts
Major	0.01	Severe impact of waterfowl

SI_7 Fish

Category	SI	Criteria
Absent	1	No records of fish stocking and no fish revealed during survey.
Possible	0.67	No evidence of fish, but local conditions suggest that they may be present.
Minor	0.33	Small numbers of crucian carp, goldfish or stickleback known to be present.
Major	0.01	Dense populations of fish known to be present.

SI_8 Pond count

Field score	SI
Count the number of ponds within 1 km of the survey pond (not separated by major barriers) and divide by 3.14. This can be done from maps rather than in the field.	Read off graph.

SI_9 Terrestrial habitat

Category	SI
Good	1
Moderate	0.67
Poor	0.33
None	0.01

SI_{10} Macrophytes

Field score	SI
Estimate the percentage of the pond surface area occupied by macrophyte cover (between May and the end of September)	Read off graph.