Whitcher Wildlife Ltd.
Wildlife Consultants.

PROPOSED ACCESS TRACKS AND PARKING AREAS ON LAND AT MAPPLEWELL, BARNSLEY.

PHASE I HABITAT AND PROTECTED FAUNA SURVEY.

Ref No:- **111143.**

Date:- **30th November 2011.**

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1. INTRODUCTION.

1.1. There are plans to construct some access tracks on an area of land at Mapplewell, Barnsley. It is proposed to remove the topsoil to a depth of 250mm, lay geotextile, replace the topsoil with 200mm of crushed hard-core, top off hard-core with 50mm of road/tarmac planings and compact all hard-cores. Two small parking areas will also be constructed to facilitate equestrian riding and recreational fishing on the River Dearne.

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

1.3. An initial site survey was carried out on 5th July 2011 and a repeat site visit was carried out on 30th November 2011 to re-visit the proposed access routes. This report outlines the findings of that survey and makes appropriate recommendations.

1.4. Appendices I to IX 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 was thoroughly searched for evidence of badger (Meles meles) activity by looking for the following signs:-

* 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 were thoroughly searched for evidence of water vole (Arvicola terrestris) activity by looking for the following signs:-

* 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 were thoroughly searched for evidence of otter (lutra lutra) activity by looking for the following signs:-

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

2.6. All mature trees and derelict buildings were checked for potential bat roosting sites 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 were thoroughly searched for the presence of crayfish where safe to enter the water.

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

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3. SURVEY RESULTS.

3.1. Data Search Results.

3.1.1. Barnsley Metropolitan Borough Council was contacted for records of protected sites or species within 1km of the survey area.

3.1.2. The results provided show the location of a Natural Heritage Site located adjacent to the south side of the survey area. A map of this and a description of the site is provided in Appendix XII of this report.

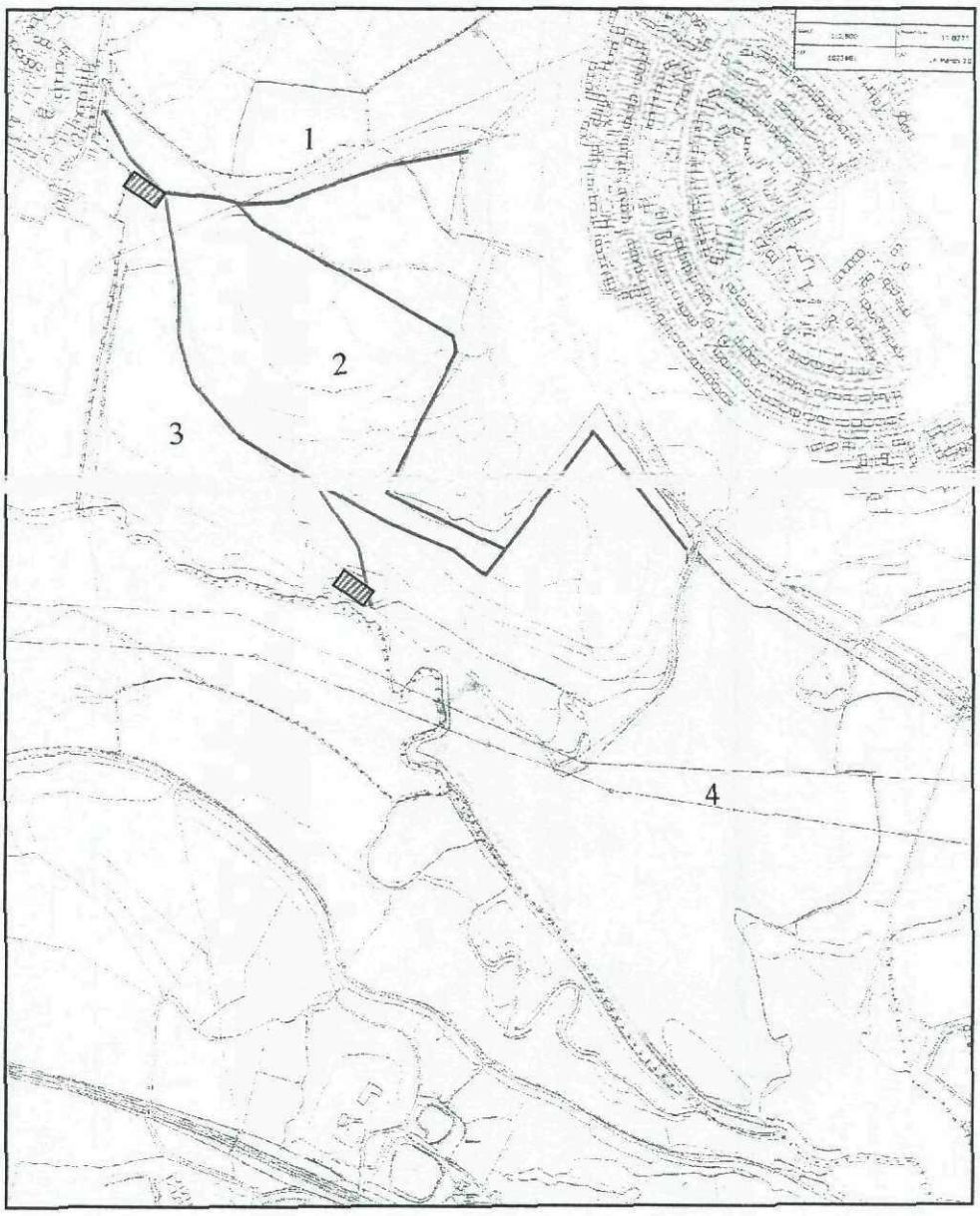
3.1.3. The site is called Barnsley Canal at Wilthorpe. It comprises a mosaic of habitats and supports a good range of aquatic plants, amphibians and insects. Great crested newts have also been reported at Willowbank, although the exact location is not specified and the records are from 2003. The site also is used by breeding, wintering and passing birds.

3.2. The Surveyed Area.

3.2.1. The surveyed area comprises 166 acres of land at Mapplewell, Barnsley. The survey area is surrounded by residential areas, grazing land and grass and scrub land areas. The River Dearne also flows along the south west of the site.

3.2.2. Aerial map to show location of site circled in red and it surrounding area.

3.2.3. The limits of the survey area are shown in the plan below. The coloured lines define different compartments of the site and the red lines define the proposed access tracks and parking areas. This report covers the entire site for completeness.



Key:

Proposed access track

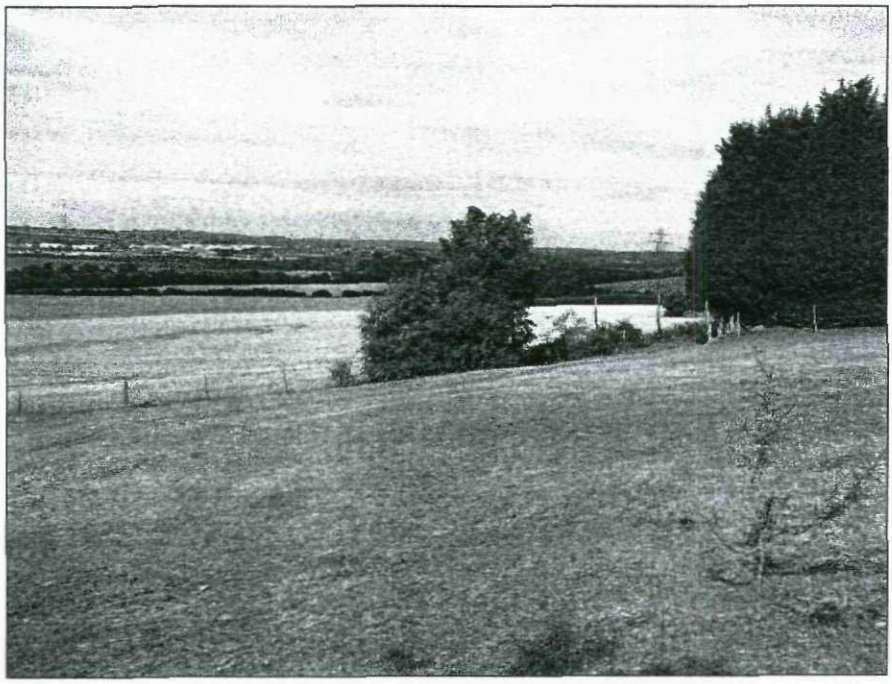
Proposed parking area

3.3. Description of Habitats.

3.3.1. Appendix X of this report contains a map of the site. This is annotated to show which habitats are present. Specific features are identified using target notes. These are cross referenced to Appendix XI of this report. The habitats on and adjacent to the site are:-

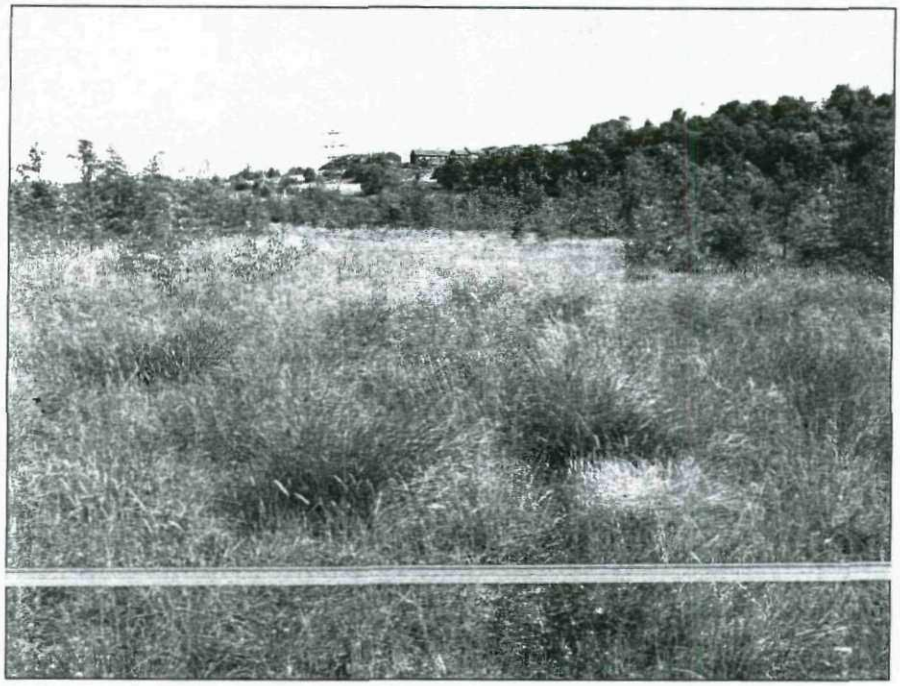
- Arable land
- Semi improved neutral grassland with scattered scrub
- Dense Scrub
- Mixed semi-natural woodland
- Marsh/marshy grassland
- Semi natural broad leaved woodland
- Flowing water
- Standing water
- Improved grassland

3.3.2. Arable land.



Compartments 1 and 4 comprise arable land. These areas simply comprise a hybrid corn crop.

3.3.3. Semi improved neutral grassland with scattered scrub.



3.3.3.1. This habitat forms the majority of compartment 2. Some areas of the neutral grassland have been mown to create amenity grassland paths, but mostly this area has been left untouched and allowed to grow long. There is also some tall ruderal herb mixed in with this habitat.

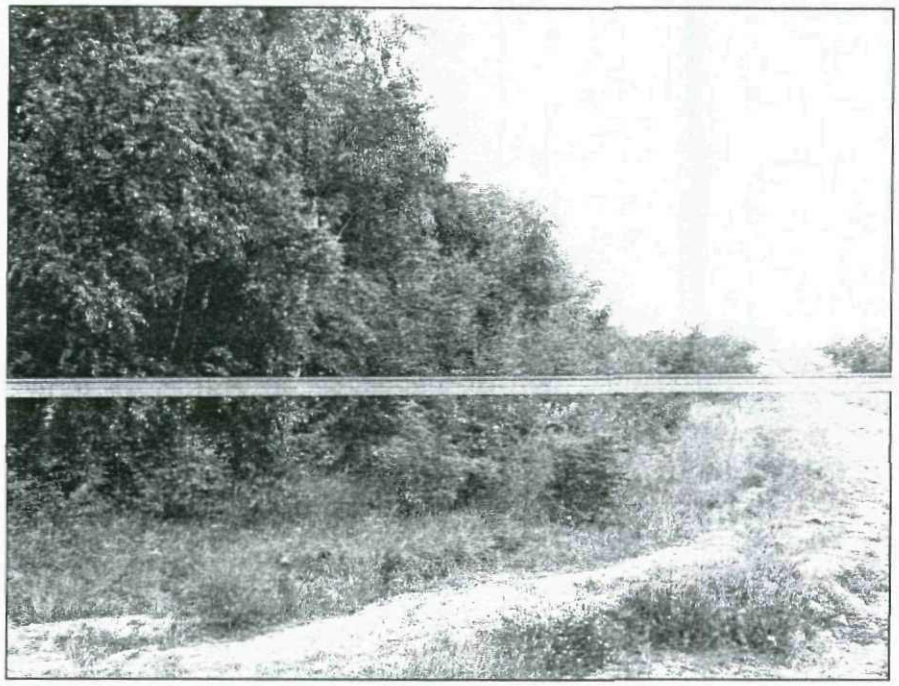
3.3.3.2. The quality of the grassland varies throughout, with some areas of low nutrient levels that have a higher proportion of wild flower species including common bird's-foot trefoil *(Lotus corniculatus)*, tormentil *(Potentilla erecta)*, vetch species and common mouse ear *(Cerastium fontanum)*.

3.3.3.3. In the higher nutrient areas there are fewer wild flower species and more species such as nettle *(Urtica dioica)*, curled dock *(Rumex crispus)*, rosebay willow herb *(Convolvulus arvensis)* and creeping thistle *(Cirsium arvense)*. The grass species cock's foot *(Dactylis glomerata)* also tends to dominate these areas.

3.3.3.4. A small amount of sheep's fescue *(Festuca ovina)* grass species was identified in one area (see target note T4). This indicates the soil is more acidic in this location.

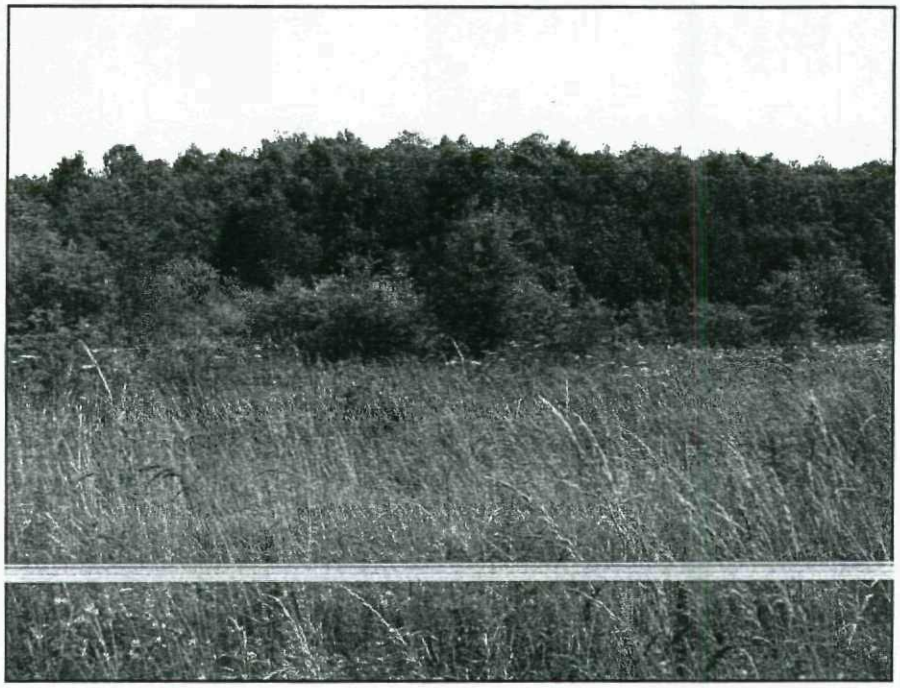
3.3.3.5. The scattered scrub species include oak *(Quercus sp)*, silver birch *(Betula pendula)*, beech *(Fagus sylvatica)* and elder *(Samucus nigra)* saplings, hawthorn *(Crataegus monogyna)* and bramble *(Rubus fruticosus)*.

3.3.4. Dense scrub.



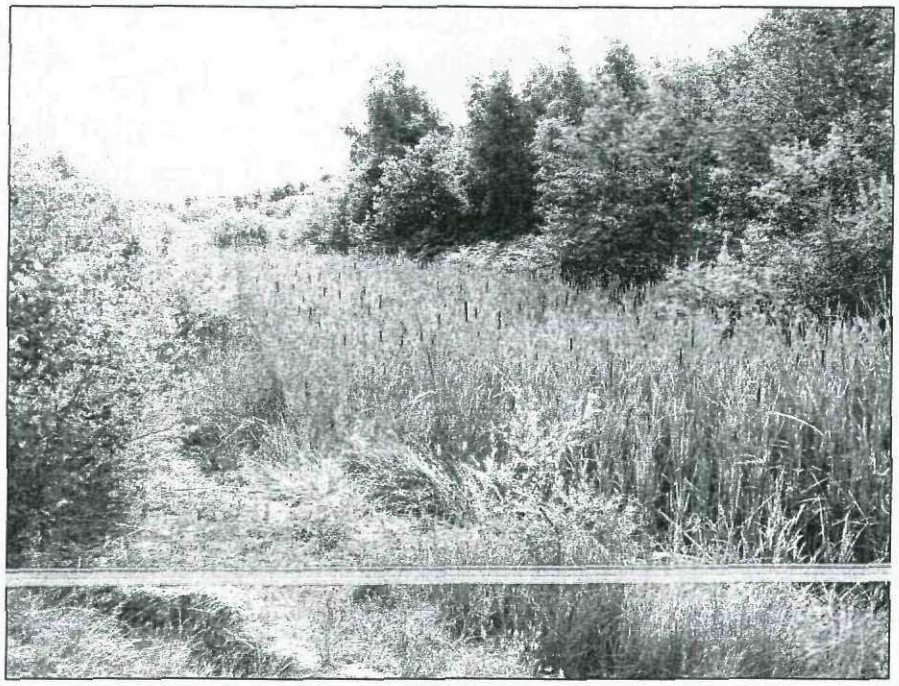
There are three patches of this habitat in compartment 2, and the species predominantly consist of hawthorn *(Crataegus monogyna)*, silver birch *(Betula pendula)*, willow *(Salix sp)* and common broom *(Cytisus scoparius)*. There is also some neutral grassland species and tall ruderal herb species mixed in with this habitat.

3.3.5. Mixed semi natural woodland.



This habitat forms compartment 3 of the site. There are two different areas in this habitat, and the species predominantly consist of hawthorn *(Crataegus monogyna)*, silver birch *(Betula pendula)*, willow *(Salix sp)*, rowan *(Sorbus aucuparia)*, hazel *(Corylus avellana)* plum *(Prunus domestica)* and common broom *(Cytisus scoparius)*. There is also some neutral grassland species and tall ruderal herb species mixed in with this habitat.

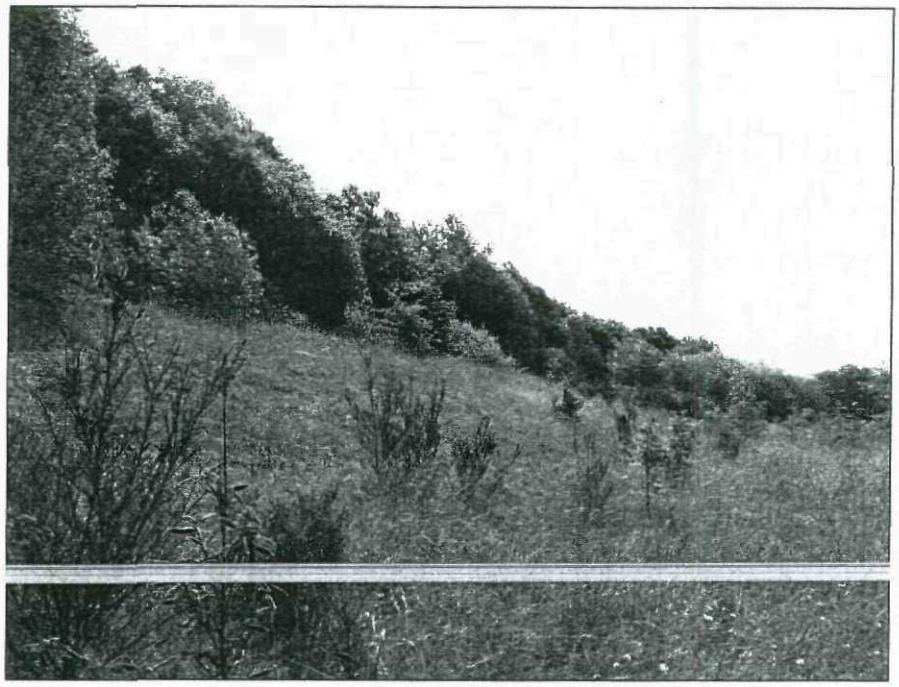
3.3.6. Marsh/marshy grassland.



3.3.6.1. There are three areas of marshy grassland within the survey area. The largest of these is located along the boundary of compartments 2 and 3. This is the result of water draining from compartment 2, as there is a steep hillside that tapers down to the marshy grassland area from compartment 2. There are another two smaller areas within the survey area as shown on the phase I habitat map.

3.3.6.2. The dominant species in this habitat are reed mace with some sedges and rushes.

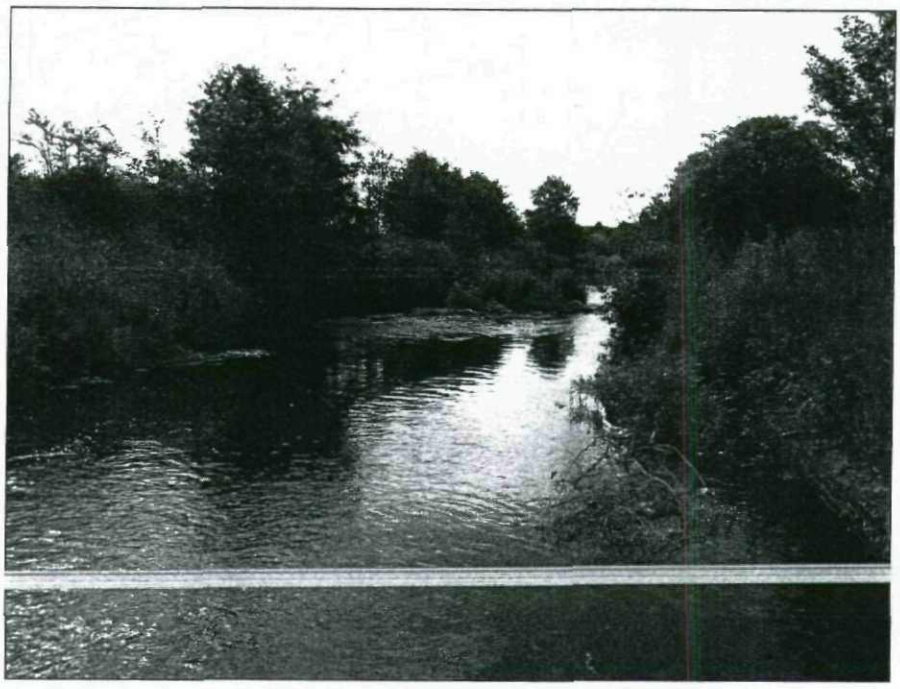
3.3.7. Semi natural broad leaved woodland.



3.3.7.1. This habitat mainly comprises semi natural broad leaved woodland on the verge of semi improved neutral grassland with the main species dominantly being silver birch *(Betula pendula)*, sycamore *(Acer pseudoplatanus)* and horse chestnut *(Aesculus hippocastanum)*.

3.3.7.2. There is some neutral grassland species and tall ruderal herb species mixed in with this habitat. There is also some scattered common broom *(Cytisus scoparius)* within the verge.

3.3.8. Flowing water



3.3.8.1. The watercourse is between 5m and 10m wide throughout the length, which stretches along the southern aspect of the site. The watercourse is between 30cm and 2m deep in places.

3.3.8.2. The banks of the watercourse are steep with exposed sand banks and heavily vegetated areas.

3.3.8.3. Standing water

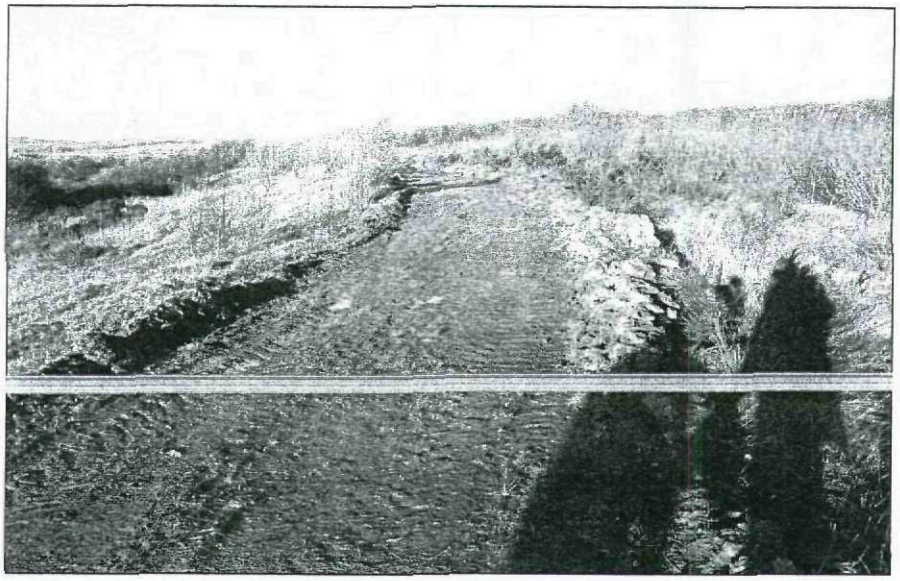
There is currently no standing water on the site due to prolonged dry periods. However there are low areas which will provide suitable area for standing water to settle.

3.3.8.4. Improved grassland.

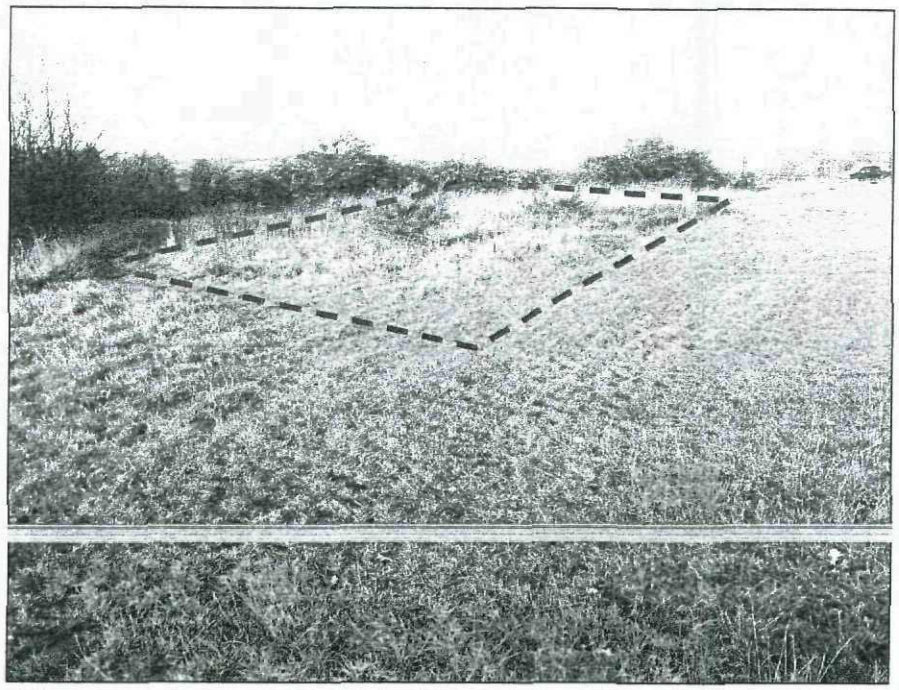
An area of improved grassland was identified to the north of the site in the form of a horse grazing field. This was not included within the site but borders very close to the site.

3.3.9. The proposed access track routes are all existing earth tracks. They are currently used by Yorkshire Water, YEB, Environment Agency, recovery vehicles and a local farmer, who all rely upon these routes for access across the site

3.3.10. Photograph to show existing track in their current state.



3.3.11. The two proposed parking areas currently comprise semi improved neutral grassland and are shown in the photographs below.



3.4. Description of Fauna.

3.4.1. No badger setts or field signs were identified within the survey area. The areas of dense scrub and woodland contained some very dense and impenetrable vegetation during the survey; however there were no field signs to suggest the presence of any badger setts.

3.4.2. There is one watercourse and one drainage ditch located on the boundary of the survey area. These are addressed separately below:

3.4.3. The River Dearne flows along the south boundary of the site. The watercourse is between 5m and 10m wide throughout the length which stretches along the southern aspect of the site. The watercourse is between 30cm and 2m deep in places.

3.4.4. No water vole or otter field signs were identified in the areas of the watercourse that were inspected during this survey.

3.4.5. There are records of signal crayfish identified to the north of this site in the River Dearne. No crayfish were identified during this survey as the watercourse was deep, which made it hard to carry out a stone turning survey.

3.4.6. There is a small drainage ditch along the northwestern boundary of the site. This is dry and provides relief for water runoff on the site.

3.4.7. There are six ponds shown on the Ordnance Survey map within 500m of the survey area. Three of these are fishing ponds and are assessed as low potential for great crested newts. The remaining three are not shown on Google earth as open water. These are shown on the desk top data search results as swamp. These may be suitable for great crested newts to use if they hold a depth of water during very wet periods and there are other ponds in the area that are reliable habitat for newts.

3.4.8. There are also two ponds shown on the Ordnance Survey present on the site. The first of these is shown in the area of dense scrub along the edge of the woodland. There is a large area of marshy grassland along the valley but there is no pond present. The second is shown in the south east corner of the site at the edge of an arable field. This is now just marshy grassland and does not currently hold water due to the prolonged dry period.

3.4.9. If there were great crested newts in the area these areas of marsh/marshy grassland may be suitable for great crested newts to use if they hold a depth of water during very wet periods.

3.4.10. The third area of marshy grassland shown on the Phase I habitat map to the north of the survey area is unlikely to hold any depth of water suitable for great crested newts at any time.

3.4.11. The desk top data search highlights that great crested newts have been reported at Willowbank, to the south of the survey area.

3.4.12. All trees within the survey area are semi mature and do not have potential for roosting bats.

3.4.13. A ruined building was identified in the small pocket of semi natural broad leaved woodland within the survey area (see target note 6). The ruined building comprises the remains of single skin brick walls that have no potential for roosting bats.

3.4.14. There is potential for nesting birds in all vegetation across the site during the nesting season, including ground nesting birds.

3.4.15. The site offers potential habitat for reptiles, mainly along the edges of the scrub and grassland habitats.

3.4.16. Throughout the section of the River Dearne which runs along the southern aspect of the survey area, there are many separate areas of Himalayan balsam. There are large areas which spread north onto the site and smaller areas which are contained on the banks on either side.

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4. EVALUATION OF FINDINGS.

4.1. The main impact of the proposed works will be on the area of semi improved neutral grassland with scattered scrub and dense scrub and potentially two of the areas of marshy grassland.

4.2. No badger issues were identified during the survey that will affect the proposed works, although there are some areas of dense and impenetrable vegetation.

4.3. The River Dearne will provide a suitable habitat for water voles and otters in places. This is due to the varying vegetation on the banks and the secluded areas which are not regularly accessed by humans.

4.4. The known presence of the non native signal crayfish in the River Dearne and the lack of records of the native white clawed crayfish make it highly unlikely that the native species will be present.

4.5. There are five areas of marsh/swamp within 500m of the site. These may offer potential for great crested newts during very wet periods. However, as these are not reliable habitat for great crested newts, newts are unlikely to be present unless there are some ponds located within 500m that are more reliable habitat for newts. Maps of the areas do not show any ponds that are likely to support great crested newt populations.

4.6. Although there are records of great crested newts at Willowbank to the south of the survey area, it is located on the opposite side of the River Dearne to the site and the marsh areas. This will form a barrier to the newts. Therefore it is assessed that there are unlikely to be great crested newts present on the site.

4.7. There are no potential bat issues on the site that will affect the proposed works.

4.8. The vegetation across the site is suitable for nesting birds, including ground nesting birds. The nesting bird season extends from March to September.

4.9. The site is potential reptile habitat, mainly around the edges of the scrub and neutral grassland. No reptiles were identified during the survey.

4.10. There is Himalayan balsam growing along the River Dearne along the south boundary of the site. This is a WCA 1981 schedule 9 plant species and it is illegal to allow it to spread.

4.11. The proposed new access tracks are on existing access routes that are already disturbed ground. The proposed works are assessed as having very low impact on the site ecology and the result of the works will result in a low increase of vehicles on the site and it is deemed unnecessary that any further Environmental Impact Assessments are required.

4.12. The proposed tracks will be permeable and therefore should not have any impact on the site drainage.

4.13. Barnsley Canal National Heritage Site is located adjacent to the south side of the site. It comprises a mosaic of habitats and supports a good range of aquatic plants, amphibians and insects. The site also is used by breeding, wintering and passing birds. The proposed works will not have any impact on or cause any disturbance to the site and the River Dearne separates the site from the survey area.

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5. RECOMMENDATIONS.

5.1. It is recommended that all personnel working on site are briefed and in the unlikely event that any large animal holes are found under areas of dense scrub works in that area must stop and professional advice should be sought immediately.

5.2. It is recommended that if there are proposed works planned for the banks of the River Dearne or the river itself, further water vole and otter survey work should be carried out in these localised areas.

5.3. No further survey work is recommended regarding the native white clawed crayfish as, with a large presence of the non native signal crayfish, it is highly unlikely that there will be any native white clawed crayfish present within the watercourse.

5.4. It is recommended that the two areas of marsh on the site identified as potentially holding a depth of water during very wet periods are left undisturbed by the proposed works.

5.5. It is recommended that all personnel working on site are briefed on the identification of great crested newts and in the unlikely event that one is found during the works it is left undisturbed and professional advice is sought immediately.

5.6. It is recommended that works are carried out in a way that it will avoid any nesting bird issues and will have minimal impact on reptiles that may be present.

5.7. This can be achieved by carrying out the works and clearing any trees or scrub that requires removal outside the nesting bird season. Vegetation clearance should be carried out by hand and all cut down to no less than six inches above ground level.

5.8. It is recommended that all personnel working on site are briefed on the identification of reptiles and instructed that if any are found during the works they are left to escape the area by their own means before work proceeds. In the event that large numbers of reptiles are found it is recommended that professional advice is sought.

5.9. It is recommended that a method statement is put in place for any works within 7m of any Himalayan balsam. Precautionary measures will need to be put in place to

prevent the spread of the plant including specialist track way laid on the ground for the mini digger to access on to prevent it from becoming contaminated. All excavated soil will then need to be disposed of as controlled waste.

5.10. As Himalayan balsam is spread by seed pods that explode when touched it is recommended that any clearance works in this specific area are carried out late winter/early spring after the plant has seeded and prior to it flowering again.

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Ruth Georgiou.
BSc, MIEEM.

Natural England Bat Survey Licence Number: - 20104395
Natural England Great Crested Newt Survey Licence Number: - 20101002
Natural England Crayfish Survey Licence Number: - 20104397
Natural England Barn Owl Survey Licence Number: - 20104398

Qualifications:
BSc Environmental Science
Full member of the Institute of Ecology and Environmental Management.

Experience:
I have seven years experience working for Whitcher Wildlife Ltd carrying out protected fauna surveys, Phase I Habitat surveys and surveys for the purpose of BREEAM assessments. I hold Natural England survey licences for bats (including handling), white clawed crayfish, great crested newts and barn owls. I have held my own Natural England site specific licences for badgers and have been the named ecologist on Natural England EPS licences for great crested newts and bats.

30.11.2011.

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.

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 V. 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 VI. INVASIVE NON-NATIVE PLANTS AND THE LAW.

THE WILDLIFE AND ACT 1981, SCHEDULE 9 PLANTS.

There are laws surrounding invasive non-native plants. Dumping unwanted plants, for example in a local stream or woodland, is an offence. It is also an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on Schedule 9 of the Wildlife and Countryside Act

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.

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*

Appendix VII. 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 and scrub 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 VIII.

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 IX. 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.

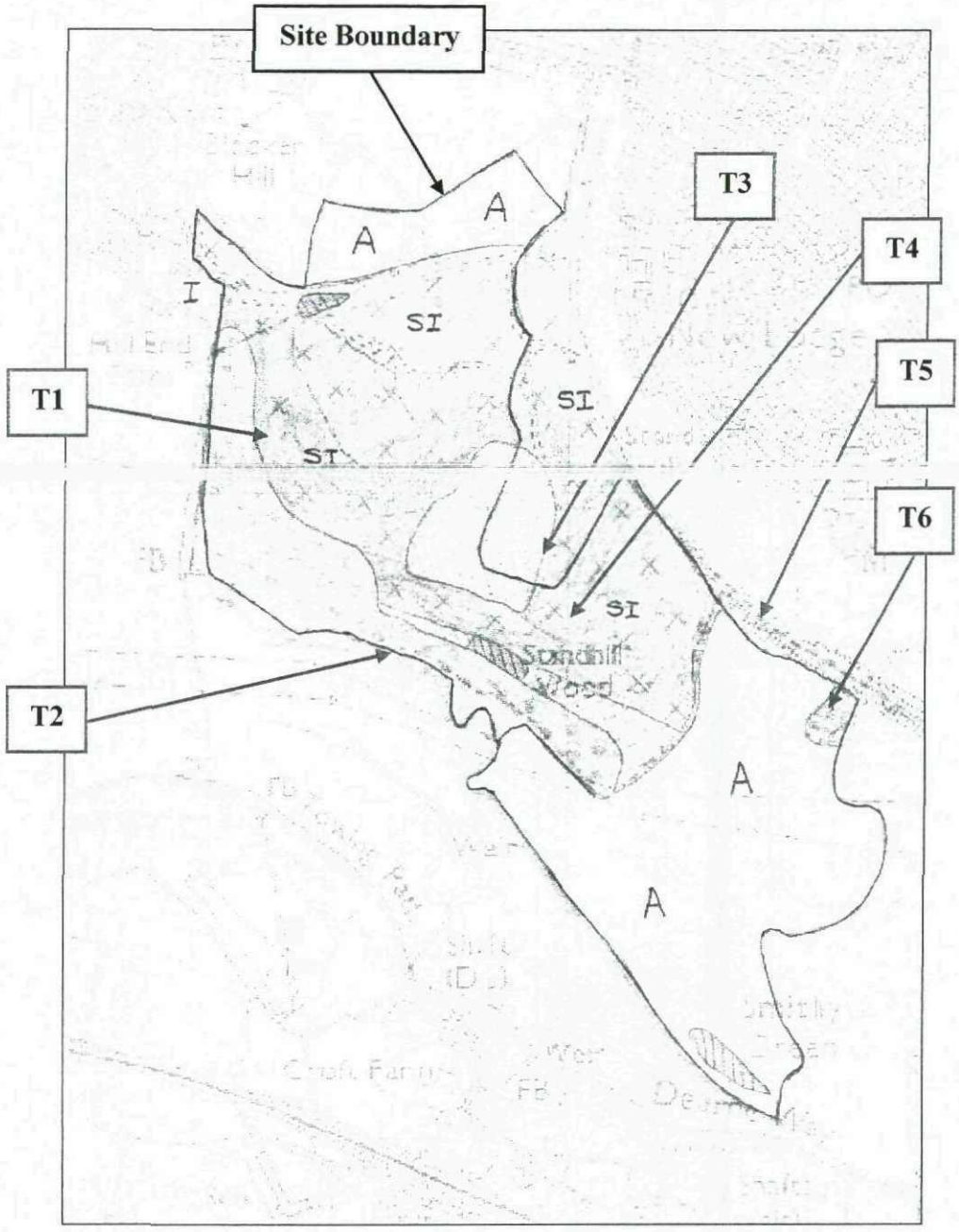
Slow worms hibernate over the winter, emerging from March onwards depending upon the weather. They begin to mate in April and May and six to twelve young are born in August or September.

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 X. ANNOTATED MAP OF THE SURVEY AREA.



Key.

Marsh/marshy grassland

Dense scrub

Mixed semi natural woodland

Broad leaved semi natural woodland

Arable

Semi improved neutral grassland with scattered scrub

Improved grassland

Flowing water

Standing water

Appendix XI. TARGET NOTES.

T1 – Small areas of bracken were identified along the woodland edge. These areas were too small to map.

T2 – Himalayan balsam was identified growing along the edge of the River Dearne. This was identified in small and large areas along the entirety of the watercourse.

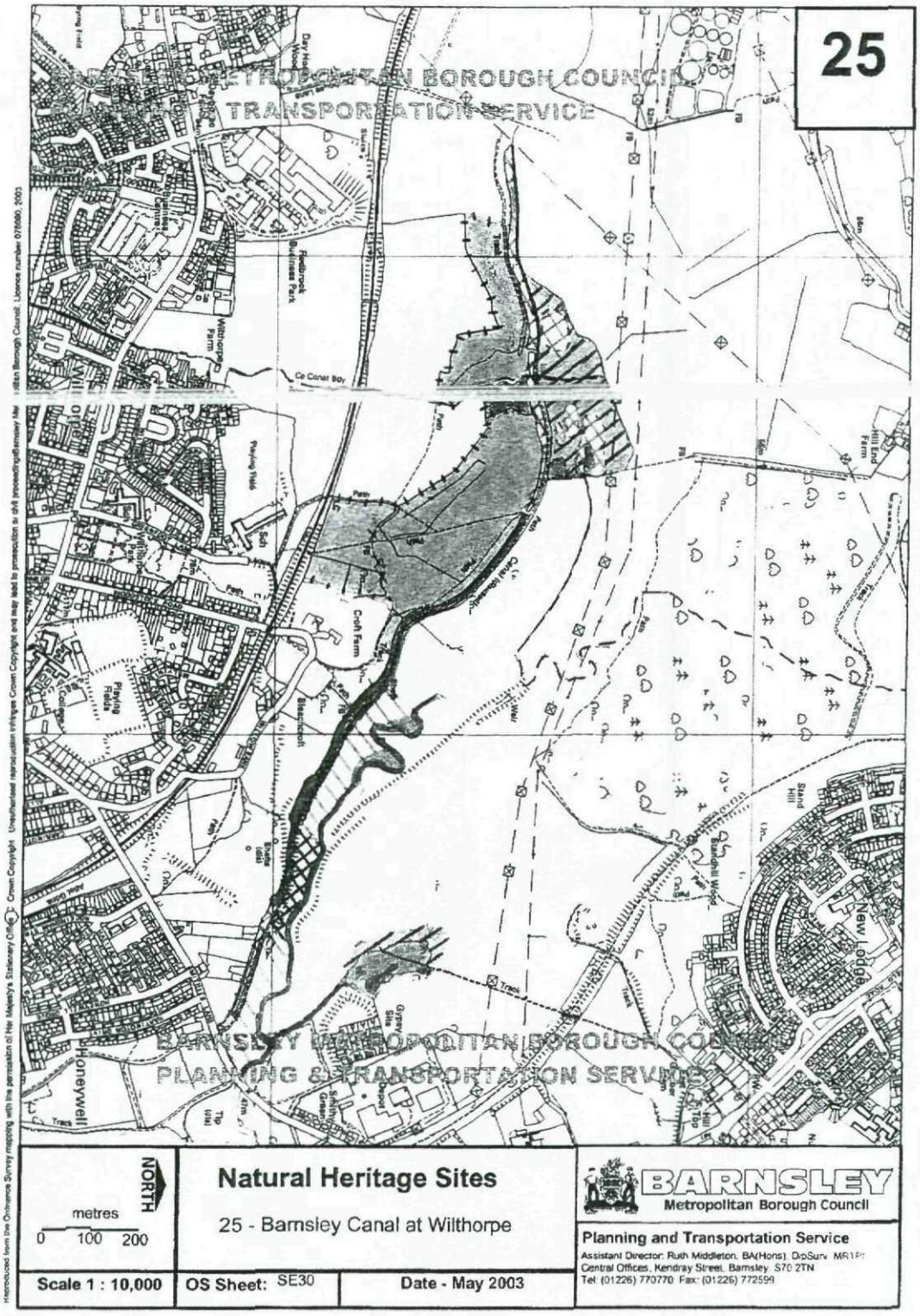
T3 – A very small area of reed mace was identified here. The ground was dry and although this area may get damp it is unlikely that this area holds a depth of water at any time of year.

T4 – A small patch of grassland was identified with small amounts of sheep's fescue present. This was not a dominant species.

T5 – This is a disused railway line that runs along the north east boundary of the site. This is now overgrown with grass, scrub and woodland.

T6 – A small ruined building was identified. This is a brick built furnace which is in a poor state and is mostly rubble. The remaining structure is double skin brick which provides no cavity for bats to roost.

Appendix XII. DATA SEARCH RESULTS FOR BARNSLEY CANAL AT WILTHORPE.



Key for habitat maps

Woodland and Scrub

 Broad-leaved woodland, semi-natural

 Broad-leaved woodland, plantation

 Coniferous woodland, plantation

 Mixed woodland, plantation

 Scrub, dense/continuous

 Scrub, scattered

 Parkland/scattered trees, deciduous

 Parkland/scattered trees, coniferous

Grassland and Marsh

 Acidic grassland, unimproved

 Acidic grassland, semi-improved

 Neutral grassland, unimproved

 Neutral grassland, semi-improved

 Improved grassland

 Marsh/marshy grassland

Tall herb and Fen

 Bracken, continuous

 Bracken, scattered

Heathland

 Dry dwarf shrub heath, acidic

 Dry heath/acidic grassland mosaic

Mire, Flush and Spring

 Sphagnum bog, blanket bog

 Basin mire

 Valley mire

 Acidic flush

Swamp, Marginal and Inundation

 Swamp, single-species dominant

 Swamp, tall

 Inundation

Open water

 Standing water

 Running water

Rock exposure

 Cave

 Rock exposure, acidic

 Quarry

 Spoil

 Mine

 Rubbish tip

Miscellaneous


Arable land


Ephemeral/short perennial


Intact hedge


Native species-rich hedge


Defunct hedge


Fence


Wall


Permanently-flooded ditch


Seasonally-wet ditch


Buildings


Bare ground


Boundary between habitats where no boundary is marked on the map


Boundary removed

Site Name: Barnsley Canal at Wilthorpe Parish:

Grid Reference: SE 336084 Area: 33.3 ha

SITE DESCRIPTION

The disused Barnsley Canal at Wilthorpe and its surrounding habitats are located between the River Dearne and the railway line, north of Wilthorpe at an altitude of 50 m AOD. The site includes a stretch of the canal, part of the old course of the river, swamp and grassland.

The disused canal is largely dry in the west of the site and dominated by reed-grass (Glyceria maxima). To the west it is also dominated by great reedmace (Typha latifolia) with bur-reed (Sparganium erectum) and saplings of birch (Betula species). The canal has water further east and a complete cover of common duckweed (Lemna minor). East of the next footbridge the water is open and contains broad-leaved pondweed (Potamogeton natans), Canadian pondweed (Elodea canadensis) and whorled water-milfoil (Myriophyllum verticillatum), a nationally scarce plant. Towards Smithy Bridge the canal is dry and dominated by reed-grass with unbranched bur-reed (Sparganium emersum). Brown sedge (Carex disticha) grows on the site and is a rare plant in the district. An increasing dominance of Typha and Glyceria were noted in 2003 together with a marked increase in willow scrub.

A variety of habitats are found either side of the canal. In the west and south of the canal is a large area of short turf, unimproved neutral grassland. The dominant grass is crested dog's-tail (Cynosurus cristatus) with common bent (Agrostis capillaris) and a rich diversity of meadow flowers including autumnal hawkbit (Leontodon autumnalis), centaury (Centaurium erythraea), meadow buttercup (Ranunculus acris), sneezewort (Achillea ptarmica), marsh thistle (Cirsium palustre), field scabious (Knautia arvensis), bladder campion (Silene vulgaris) and common tormentil (Potentilla erecta). The grassland is broken up by a small wooded area of hawthorn (Crataegus monogyna) and a dry pond dominated by hard rush (Juncus inflexus).

North of the canal is the site of Wilthorpe Marsh, which has been drained. A few small marshy areas remain and these are dominated by great reedmace with soft rush (Juncus effusus) water-plantain (Alisma plantago-aquatica), common water-starwort (Callitriche stagnalis) and autumnal starwort (C. hermaphroditica), a nationally scarce plant. Other plants include water mint (Mentha aquatica) jointed rush (Juncus articulatus), marsh bedstraw (Galium palustre), common skullcap (Scutellaria galericulata) and lesser water-parsnip (Berula erecta), a rare plant in the district.

The old course of the River Dearne contains great reedmace, bur-reed, common duckweed, green water-cress (Nasturtium officinale), curled pondweed (Potamogeton crispus) and fennel-pondweed (P. pectinatus), Canadian pondweed, water-plantain and lesser water-parsnip.

Between the old river and the canal is an area of acid grassland dominated by common bent and red fescue (Festuca rubra) with a variety of herb species including common tormentil, devil's-bit scabious (Succisa pratensis), common knapweed (Centaurea nigra) and yarrow (Achillea millefolium).

An area of swamp with small pools north of the river is dominated by great reedmace with lesser pond sedge (Carex acutiformis), a rare plant in the district, and lesser water-parsnip with small pools. Adjacent to the swamp is a slope of grassland with common bent grass, devil's-bit scabious and hawkweeds (Hieracium species). A small marsh dominated by dense soft rush with sneezewort, devil's-bit scabious, common skullcap and gipsywort (Iycopus europaeus) is found north of the larger swamp area.

The site supports breeding sedge and reed warbler, lesser whitethroat, kingfisher (a Bird of Conservation Concern) and sparrowhawk. Snipe, redshank and little ringed plover visit the site on passage. In autumn there is a large roost of swallows using the areas of great reedmace. In winter areas of scrub are used by feeding and roosting thrushes, finches and buntings, sometimes in large numbers. The old course of the river is used for fishing and contains good diverse fish populations of roach, perch, tench, bream, carp, dace, bleak and pike. The area supports populations of amphibians such as common toad, common frog and smooth newt. Great created newt have also been reported at Willowbank (pers. Comm. J Lunn 2003).

Wilthorpe Marsh was a very rich site entomologically and it is not known how much of this interest has been lost due to the drainage scheme. A rare sawfly, Dolerus megapterus is found on the vegetation of the canal and this is the first record for this species in Yorkshire. Dragonflies and damselflies on the site include the brown aeshna Aeshna grandis, emerald damselfly Lestes sponsa, a rare species in South Yorkshire and common sympetrum Sympetrum striolatum.

SITE EVALUATION

Criteria

Size: This is a fairly large site with a mosaic of habitats including a large area of species -rich unimproved grassland.

Diversity: The site is centred on the canal which contains a diversity of aquatic plants. Diversity is added to the sit by the inclusion of species-rich neutral grassland and acid grassland and swamp areas. The site supports breeding. wintering and passage birds. amphibians and a variety of insect life.

Naturalness: The canal is man-made and the vegetation communities on the site are semi-natural and unmanaged.

Rarity: Myriophyllum verticillatum is a nationally scarce plant found in 75 10 x 10 km squares in Great Britain (NCC. 1989). Callitriche hermaphroditica is a nationally scarce plant found in 79 10 x 10 km squares in Great Britain. Berula erecta and Carex disticha are rare plants in Barnsley. Carex acutiformis is only found in one other site in the district. Dolerus magapterus is a rare insect in Britain and the first record for this species in Yorkshire. (Lestes sponsa) is a rare insect in South Yorkshire (G. Blunt. 1987)

Fragility: The site for Callitriche hermaphroditica is vulnerable to drying out as it exists in the remnants of a previous marsh, now drained for agricultural improvement. Myriophyllum verticillatum is found in a stretch of the canal with algae which could increase and smother out the rare plant. Much of the site was be subject to a proposal for opencast coal mining in 1993.

Typicalness: The various wet and dry habitats in the site contain a typical range of plant species for the particular vegetation communities. A variety of characteristic animal life is found in the habitats on the site.

Evaluation of important features

Site Feature		Importance		
1.	Habitat type		District	
	Woodland		Low	
	Grassland		High	
	Standing water		High	
	Swamp		High	
	Marsh		Average	
2.	Species	National	County	District
	Myriophyllum verticillatum	High*		
	Callitriche hermaphroditica	High*		
	Berula erecta			Average*
	Carex acutiformis			Average*
	Carex disticha			Average*
	Breeding birds			Average
	Passage birds			Average
	Dolerus megapterus	Average*	High*	
	Lestes sponsa			High*

2.	Species	National	County	District
	Great Crested Newt	Average*	High*	

* Requires survey to verify current status.

Existing site designations: NHS

Site justifications: The Barnsley Canal at Wilthorpe is a rich mosaic of wet and dry habitats centred on the disused canal. some of which are vulnerable and may be lost. The habitats of particular note include the canal itself. a large area of unimproved. neutral species-rich grassland and swamp communities. The site contains two nationally scarce plants. Myriophyllum verticillatum and Callitriche hermaphroditica. It supports a variety of fauna including good populations of freshwater fish. amphibians, breeding and passage birds and the rare sawfly Dolerus megapterus. a first record for Yorkshire.

Barnsley Biodiversity Action Plan
HAP 7 Flood Plain Grazing March
HAP 8 Lowland Meadows
HAP 9 Lowland Dry Acid Grassland
HAP 11 Ponds and Canals

SITE MANAGEMENT

Management objective:
To maintain the present habitats on the site.

Initial Management:

Remove algae from area of Myriophyllum verticillatum.
An urgent task is to clear some great reedmace from the swamp area to increase the area of open water and encourage species diversity.
Urgent liaison with landowner to seek protection for area of swamp with Callitriche hermaphroditica.
Investigate sources of pollution in old course of river.
Boundary fencing to protect parts of site, e.g. beside canal, from overgrazing by ponies.

Ongoing management:

Monitor populations of rare plants and initiate management as necessary.
Consider dredging out canal to Smithy Bridge to give more open water habitats for *Myriophyllum verticillatum* to spread.

Constraints:
Landowner who drained Wilthorpe Marsh may not be amendable to agreeing to conservation measures to protect the C. hermaphroditica. Possible liaison through FWAG or NFU.
Financial implications of dredging canal.
Uncontrolled grazing by ponies on parts of the site was noted in 1990/1 and is still occurring in 2003.
An invasive alien water plant, water fern (Azolla filiculoides) was abundant in some areas of the canal and also in some ponds (2003). This plant is difficult to control and may smother the water' s surface to the detriment of native aquatic species.

Opportunities:

Opencast proposals have put the site as a high profile to local people so they may be willing to assist in management, e.g. monitoring rare plants. Approach local contractors to see if they would lend plant and operator to dredge canal.

SITE CONSTRAINTS AND OPPORTUNITIES

Constraints:

Opencast proposals in 1993. New proposals in 2003.
Urban fringe problems such as litter and burnt-out cars.

Opportunities:

Much local interest in site, so good site for NHS publicity.
Barnsley MBC ownership of the canal gives opportunities for conservation management and interpretative information on the special interest.
BMBC have discussed possible Local Nature Reserve Status with English Nature.

REVIEW OF BARNSLEY NHS SITES – FEBRUARY/MARCH 2003

Barnsley Canal at Wilthorpe

1. Site Boundaries
The site boundaries, as shown on the 1990 Survey map, are confirmed as being correct. This site linked to NHS 26 Cliff Wood by the candidate NHS Old Mill Lane.

2. Main Habitat Components
The main habitat components, as shown on the 1990 Habitat map, are confirmed as being correct, but see Sections (3), (4) and (5) below.

3. Habitat Change/Loss
It is likely that Typha latifolia and Glyceria maxima have both spread and increased in abundance since the 1990/1 Survey. The willow scrub fringing the disused Barnsley Canal is also very frequent and invasive now.

4. Notable/Rare Species
A number of species are listed as being nationally or locally rare, in the 1990 Survey, including Myriophyllum verticillatum and Callitriche hermaphroditica (nationally rare), and Berula erecta, Carex acutiformis and C. disticha locally rare. In addition to these plants, two invertebrates, Dolerus megapterus and Leptes sponsa, are also listed as being rare in the county and/or district sense.

It would be very worthwhile to conduct a survey this summer (2003) to establish that all these plant and animal species are still present. None of the plant species was seen in March 2003, and it is suspected that the aquatic vegetation changes highlighted in (3) above and discussed at more length in (5) below, may have had some impact on the frequency and distribution of these rarer species.

5. Potential/Actual Threats
Much of the Barnsley Canal itself, as well as the other water bodies and margins of the River Dearne, are choked with either (or both) abundant Typha latifolia and Glyceria maxima. These species are very invasive and their detritus builds up over time and lowers the water table, eventually producing a seral succession from open water – through swamp – marshland – and leading ultimately to carr woodland.

More importantly, the scarce plant species interest will undoubtedly be lost if the spread of these tall, aggressive colonists is allowed to continue, and the open water areas completely disappear. Furthermore, the locally abundant willow scrub fringing some sections of the canal is overhanging or falling into the water. This willow scrub needs urgent cutting back or complete removal.

Considerable clearance of both Typha latifolia and Glyceria maxima needs to be undertaken as a matter of urgency. This valuable wetland habitat may already be impaired and is certainly suffering and degraded at the present time because of the spread of these aggressive species.

Horses have access to the towpath of the canal from the adjacent fields to the north and there will inevitably be some grazing of the marginal vegetation and unnecessary trampling and puddling of the towpath itself (this was very evident in March 2003, when the towpath was a quagmire in places). Numerous horses were also grazing the fields to the south of the canal which are identified as being

botanically rich in the 1990 Survey. It is suspected that this severe horse grazing will have a somewhat deleterious effect on the grassland vegetation.

There was also quite a degree of fly tipping noted in and around the canal. and a dumped and burned out car in the marshy field by the River Dearne.

Appendix XIII. SPECIES LIST.

Catagory	Common Name	Species Name
A - Trees and shrubs	Hawthorn	*Crataegus monogyna*
	Elder	*Sambucus nigra*
	Broom	*Cytisus scoparius*
	Silver Birch	*Betula pendula*
	Crack Willow	*Salix purpurea*
	Goat Willow	*Salix capreao*
	Rowan	*Sorbus aucuparia*
	Ash	*Fraxinus excelsior*
	Hazel	*Corylus avellana*
	Wild Cherry	*Prunus avium*
	Plum	*Prunus domestica*
	Black Thorn	*Prunus spinosa*
	Oak	*Quercus sp*
	Beech	*Fagus sylvatica*
	Sycamore	*Acer pseudoplatanus*
	Horse Chestnut	*Aesculus hippocastanum*
B - Herbs	Red Clover	*Trifolium pratense*
	Bird's-foot Trefoil	*Lotus corniculatus*
	Tormentil	*Potentilla erecta*
	Dandelion	*Taraxacum officinale*
	Creeping Buttercup	*Ranunculus repens*
	Meadow Buttercup	*Ranunculus acris*
	Bulbous Buttercup	*Ranunculus bulbosus*
	Curled Dock	*Rumex crispus*
	Ribwort Plantain	*Plantago lanceolata*
	White Clover	*Trifolium repens*
	Vetch sp.	*Vicia sativa*
	Creeping Thistle	*Cirsium arvense*
	Rosebay Willowherb	*Epilobium angustifolium*
	Bindweed	*Calysteeia sepium*
	Field Mouse-ear	*Cerastium arvense*
	Bladder Campion	*Silene vulgaris*
	Ragwort	*Senecio jacobaea*
	Black Medic	*Medicago lupulina*
	Yellow Loosestrife	*Lysimachia vulgaris*
	Bramble	*Rubus Fruticosus*
	Hogweed	*Heracleum sphondylium*
	Dog Rose	*Rosa canina*
	Meadow Sweet	*Filipendula ulmaria*

	Ox Eye Daisy	*Leucanthemum vulgare*
	Horses Tail	*Hippuris vulgaris*
	Himalayen Balsam	*Impatiens glandulifera*
	Nettle	*Urtica dioica*
C - Grasses	Cocks Foot	*Dactylis glomerata*
	Sheeps Fescue	*Festuca ovina*
D - Rushes and Sedges	Soft Rush	*Juncus effusus*

Appendix XIV. DEREK WHITCHER CV.

CURRICULUM VITAE

Derek A. Whitcher BSc, MCMI, MIEEM.

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PROFILE.

My background is as an experienced and qualified Manager in industry and I am a Member of the Chartered Institute of Managers (MCMI). My outside work interests have always been centred around environmental issues and the enjoyment of studying and learning about wildlife with particular emphasis on mammals and birds.

I have twenty years intense experience in badger ecology, gained through being an active member of my local badger group and the National Federation of Badger Groups, and also as an independent Badger Consultant and Wildlife Consultant.

I have many years experience in the study of amphibians, badgers, bats, crayfish, otters, reptiles and water voles, which I have now refined in line with recent protective legislation and survey guidelines as an independent Wildlife Consultant.

I am Managing Director of our own Wildlife Consultancy, a limited company with seven employees.

EXPERIENCE.

1977 to date. Actively involved with a number of environmental groups and charities.

1988 to date. An active member of the South Yorkshire Badger Group.

1992 to 2005. Chairman of the South Yorkshire Badger Group.

1993 to 2001. Trustee of the National Federation of Badger Groups.

1998 to 2002. Self employed Badger and Water Vole Consultant.

2002 to date. Managing Director of Whitcher Wildlife Ltd. Wildlife Consultants.

In my capacity as Chairman of the South Yorkshire Badger Group I have organised and led a number of projects. I have:

- undertaken numerous badger surveys, both to monitor badger activity across the County and for more specific projects.

- continually monitored and recorded badger setts in South Yorkshire and maintained comprehensive records of my visits to over 1400 setts during the last fifteen years.

- arranged and been actively involved in more than 100 badger sett protections throughout the County.

- been instrumental in the development of a nationally recognised design of artificial badger sett.

- organised and led the construction of more than 100 artificial setts, each one being constructed for a specific purpose.

- contributed to publications on artificial badger setts, including the RSPCA booklet entitled "Problems with Badgers" and the "Country Life Guide to Artificial Badger Setts".

- held RSPCA approved badger rehabilitation facilities on my own premises for over 20 years. During that time I have cared for over 300 injured and orphaned badgers, some as young as five weeks old that needed hand rearing.

- supervised a project that has enabled approximately 200 orphaned badgers to be returned to the wild.

- personally organised a project that has reversed the decline of the badger population in the 135 square miles of the Borough of Doncaster, due to persecution. Since 1992 this project has turned a small and unsustainable population of four social groups of badgers into a thriving population of more than sixty social groups.

- organised and chaired two international, weekend residential, badger conferences and lectured at two further badger conferences.

- given numerous talks to youth, conservation and community groups on a wide range of badger and wildlife issues.

- worked closely with the police and the RSPCA, advising the police on legislative procedure and also attending court as an expert witness on behalf of the Crown Prosecution Service in cases brought under the Protection of Badgers Act 1992.

In my capacity of a Trustee of the National Federation of Badger Groups, I have:

- chaired a national committee to define a set of rules for the care and return of injured and orphaned badgers back into the wild.

- chaired national and local meetings on specific issues, including bovine tuberculosis.

Since becoming a self employed Badger and Water Vole Consultant in 1998 and subsequently managing director of my own Wildlife Consultancy, I have carried out commercial surveys for housing developers, quarrymen, local councils, the road construction industry, railways and other land owners.

- Every survey has included a full assessment of the site and surrounding area using a wide variety of specialist techniques and survey methodologies.

- Results and recommendations are presented in a comprehensive and professional report format in line with industry standards.

- Where required by the client, I follow through and supervise recommended mitigation measures to their completion. This includes providing full justification for the proposed mitigation to the appropriate Licensing Authority and provision of all necessary licences.

- I am experienced in all aspects of legislation and licensing requirements. I have actioned and supervised licences from English Nature, DEFRA, CCW, Natural England, Welsh Assembly, SNH and SEPA.

- **Badgers:** I have extensive experience and have held numerous disturbance and exclusion licences in England, Scotland and Wales.

- **Barn Owls:** I hold a Natural England barn owl survey licence and have carried out numerous barn owl surveys.

- **Bats:** I have extensive experience and I am a member of the Bat Conservation Trust. I have attended a variety of bat courses including an initial English Nature training course, a three day BCT Bats and Bat Survey Foundation Course, Bats in Bridges course and the Anabat System and how to use it course. I hold a Natural England bat survey licence, I have held numerous site specific licences and I am a voluntary Natural England bat warden and have been inoculated for rabies.

- **Birds:** I have carried out numerous common bird census surveys.

- **Crayfish:** I have attended an IEEM professional development workshop on Working with Crayfish – Stage I and the Stage II course entitled Crayfish mitigation, Crayfish Plague and Non Natives. I hold a Natural England crayfish survey licence, have carried out numerous crayfish surveys and held Natural England Crayfish Conservation Licences.

- **Great Crested Newts:** I have attended two IEEM professional development workshops on Great Crested Newts. One entitled "Survey, Handling, Licences and the Law" and the other, "An Introduction to Translocation of Great Crested Newts". I hold a Natural England and a CCW Great Crested Newt Survey license. I have carried out numerous GCN surveys and held DEFRA, Natural England and Welsh Assembly GCN exclusion and mitigation licences.

- **Nesting Birds;** I have carried out numerous nesting bird surveys.

- **Otters:** I have carried out voluntary and professional otter surveys and held Scottish EPS Otter Conservation Licences including a current licence for the disturbance of otters in connection with a flood defence scheme in Glasgow.

- **Reptiles:** I have carried out numerous reptile surveys.

- **Water Voles:** I have carried out numerous water vole surveys and organised and carried out a number of water vole translocations.

- **Training:** I have delivered training days on a variety of protected species topics and I have trained all of my staff to become wildlife consultants.

- **Railway Qualification:** I am PTS and IWA qualified for working on the railways. I have steered the company through the varying aspects of railway working resulting in the company becoming a Link Up approved supplier to Network Rail and its contractors.

- **Planning:** I plan, organise and supervise all client projects, interpreting client needs, addressing the issues and providing solutions to a wide range of projects.

- I am a Member of the Institute of Ecological and Environmental Management.

- A large proportion of the surveys my company carries out are protected fauna surveys where we are looking for all fauna species, particularly amphibians, badger, bat, otter, reptiles and water vole, plus invasive species including Japanese Knotweed and Giant Hogweed.

- Increasingly our surveys include Phase I Habitat Surveys and I have attended an IEEM training course on Phase I Habitat Survey Techniques.

I am fortunate to be in a position where I have been able to turn my long-term hobby into my career. I now manage my own thriving and expanding company whereby I can offer my clients an extensive range of services, based on many years of knowledge and practical experience.

Derek A Whitcher. B.Sc., M.C.M.I., MIEEM.