# Winyates Green Triangle - Phase 1 Habitat Survey & Protected Species Survey Assessment

Borough of Redditch
Core Strategy
Background Document

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# WINYATES GREEN
# TRIANGLE
# REDDITCH
# WORCESTERSHIRE

**Phase 1 Habitat Survey**
**& Protected Species Survey Assessment**

**FINAL**
**report to**
**Redditch Borough Council**

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## SUMMARY

In late April 2010 Worcestershire Wildlife Consultancy were commissioned by Redditch Borough Council to undertake a Phase 1 habitat survey and protected survey assessment on an area of land known as Winyates Green Triangle in the Stratford-on-Avon District, adjacent to Redditch.

From an ecological context, the site supports an interesting mosaic of semi-natural habitats including good semi-improved neutral grassland, scrub, veteran standard trees, semi-natural broadleaved woodland, streams, ponds and species-rich hedgerows, many of which are recognised for their nature conservation value within the Worcestershire Biodiversity Action Plan including ancient and species-rich hedgerows, semi-natural grassland, scrub, woodland, veteran trees and rivers & streams (Please refer to Appendix 1 for a site plan identifying these habitats). Furthermore, most of the hedgerows are recognised as important when assessed against the hedgerow regulations (1997) criteria. Similarly the larger part of the wooded lane known as “Ravensbank Drive Bridle Track” meets the Special Wildlife Site criteria, even when assessed in isolation from the remainder of the site.

Of less conservation interest are the poorer areas of semi-improved neutral grassland within the fields and the amenity grassland that runs either side of Far Moor Lane.

In relation to protected species, further surveys are recommended for great crested newts, bats, badgers and potentially dormice.

For this site, it is unlikely that a large-scale development could be adequately incorporated without a significant loss and/or affect to the semi-natural habitats. A smaller development, if adequately located on poorer grassland, whilst minimising damage to, and retaining where possible woodland, hedgerows, ponds and stream habitat, would have a significantly lower impact.

**It should be noted that if more than twelve months elapse between this assessment and the commencement of any development then a further survey assessment should be undertaken at an appropriate time to determine the status of any protected species which may have taken up residence during the intervening period.**

# 1 INTRODUCTION

## 1.1 Commissioning Brief

In April 2010, Worcestershire Wildlife Consultancy was commissioned by Redditch Borough Council to undertake a Phase 1 habitat survey and protected species survey assessment on an area of land known as Winyates Green Triangle in the Stratford-on-Avon District, adjacent to Redditch, on the border of Worcestershire and Warwickshire.

## 1.2 Summary of the Proposed Development

The site has been identified for a potential site for development. No development plans were submitted to supplement this report.

## 1.3 Site Location

Winyates Green Triangle is located on the eastern outskirts of Redditch Worcestershire, and for the most part falls within the county of Warwickshire (NGR SP086678). The survey area is located between residential housing and the main A4023 and A435 main roads.

## 1.4 Scope of the Survey

The ecological assessment focussed on the following points:

- Determining the potential of the area of the proposed development work to support protected species of which account must be taken prior to and during the planned works in accordance with the Wildlife and Countryside Act 1981, the Conservation of Habitats and Species regulations 2010, the Protection of Badgers Act 1992 and the Countryside & Rights of Way Act 2000.
- The survey assessment also aimed to identify habitats and species recognised within the local Biodiversity Action Plan (BAP Habitats).

Furthermore, the survey assessment recommendations are guided by the following policies:

- With regard to Planning Policy Statement 9 (PPS9), it is now a requirement for local planning authorities to maintain and enhance, restore or add to biodiversity. As stated within Paragraph 14 of the document, “Development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design. When considering proposals, local planning authorities should maximise such opportunities in and around developments, using planning obligations where appropriate”.
- The site visit also focussed on assessing the potential of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to Planning Policy Statement 9: Biodiversity & Geological Conservation (ODPM, 2005), especially those given protection under British or European wildlife legislation as stated above.
- The Natural Environment & Rural Communities Act (NERC), 2006 states. “Every public authority must, in exercising its functions, have regard, so far is consistent

with the proper exercise of those functions, to the purpose of conserving biodiversity".

### 1.5 Biological Records

A search of biological records kept by Worcestershire Biological Records Centre was commissioned to ascertain the presence and distribution of protected species, non-statutory and statutory sites within a 2km radius of the site.

### 1.6 Survey Constraints

The comprehensiveness of any ecological assessment may be limited by the season in which the site visit was undertaken. To confirm the presence or absence of all protected species usually requires multiple visits at suitable times of the year.

It should be noted that the botanical survey is likely to be limited for this report as the survey was undertaken in late April, which is outside the optimal survey period for neutral meadows. Further botanical information, will nevertheless be submitted and added to the list over the summer period.

This report cannot therefore be considered to provide a comprehensive analysis of the ecological interest of the site. However, it does provide a "snapshot" of the ecological interest present on the days of the visit and highlight areas where further survey work may be required.

## 2 METHODOLOGY

Nick Button of Worcestershire Wildlife Consultancy undertook the assessment on 27th, 28th and 29th of April 2010. The weather was dry and for the most part sunny on all three visits.

### 2.1 Phase 1 Habitat Survey

Habitats on the site of the proposed works were assessed to assist in determining areas with the potential to support protected species and areas where further survey work will be required. Habitat assessment was made in accordance with the NCC Phase 1 Habitat Survey methodology (JNCC, 1990) with the addition of comprehensive species list. (Where appropriate maps are provided in other formats such as annotated aerial photographs).

### 2.2 Great-Crested Newts

During the site visit the potential of the site to support great-crested newts was assessed; this included looking for potential breeding sites such as ponds, disused swimming pools and other waterbodies. The assessment also focused on the potential for these species to find refuge in places such as log piles, rubble and compost heaps. The assessment also included a preliminary netting and egg searching exercise.

Where waterbodies occur it is possible to undertake a Habitat Suitability Index (HSI).

This is a standard assessment method developed specifically to evaluate the habitat suitability for great crested newts. A series of factors must be considered. Each factor is assessed along suitability guidelines and allocated a value of between 0.1 (highly unsuitable) to 1.0 (highly suitable). The geometric mean of these values provides an overall suitability score for the site. Although this is no substitute for a dedicated survey it does give an indication of whether such a survey is needed.

### 2.3 Reptiles

The site was assessed for suitable habitats that may support reptiles. Slow-worms (*Anguis fragilis*) and common lizards (*Zootoca vivipara*) inhabit a large variety of habitats, such as rough grassland, heathland or woodland edge where there are suitable opportunities for maintaining their body temperature and finding suitable prey. Grass snakes (*Natrix natrix*) are normally associated with waterbodies but they have a wide home range of up to 2km² and can occur anywhere within that range, particularly in grassy sites as the common name implies. Where relevant habitat occurs, incidental evidence pertaining to the presence reptiles including tracks and sloughed skin was recorded.

### 2.4 Birds

Notes were taken as to the suitability of habitats to support birds in terms of feeding, nesting and sheltering. Where relevant habitat occurs, incidental evidence identifying the presence of birds including nests, droppings, pellets and feathers were recorded.

### 2.5 Bats

The site was assessed for suitable habitats that may support bats. Typically bat species roost in roof spaces of buildings, caves and trees that have suitable holes or are covered with dense ivy. Evidence regarding the presence of bats including droppings is searched for during the assessment but this is only possible where there are large deposits of bat guano at the base of holes or fissures within trees. Internal surveys are conducted where access is possible and safe in suitable crevices and holes in trees using Clulite lamps (with red filter), video endoscope, angled mirrors and small flexible LED lamps (where appropriate).

### 2.6 Badgers

The site was assessed for suitable habitats that may support badgers. Where relevant habitat occurs, incidental evidence pertaining to the presence of badgers including setts, latrines, tracks, snuffle holes, padding or guard hairs is recorded.

### 2.7 White-Clawed Crayfish

The site was assessed for suitable habitats that may support white-clawed crayfish. This typically includes suitable freshwater streams and rivers but may also include still water-bodies.

### 2.8 Water Voles

The site was assessed for suitable habitats for suitable habitat along water bodies. Where this habitat occurs incidental evidence pertaining to the presence of these mammals in the form of burrows, latrines, runs, footprints and distinctive "feeding lawns" is recorded.

### 2.9 Otters

The site was assessed for suitable habitats or habitat that may be used by otters. This includes relevant riparian habitats but also features within close proximity of water bodies that provide lying up or denning sites. Where relevant habitat occurs, evidence of the presence otters including spraints, anal jelly, tracks and feeding remains is recorded.

### 2.10 Dormice

The site was assessed for suitable habitats that may support dormice including suitable woodland and hedgerows. Where relevant habitat occurs incidental evidence pertaining to the presence of dormice including nests and gnawed nuts is recorded.

## 3 RESULTS AND DISCUSSION

### 3.1 Data Search

The biological data search from Worcestershire Biological Records Centre yielded records of several protected species within 2km of the site. These included badger (*Meles meles)*, great crested newt (*Triturus cristatus)* and a number of different bat species. Only great crested newts have been recorded from this site. Please refer to Appendix 3 for full details of these and other species.

Several sites of ecological importance were also identified within the area, however only one site, "Ravensbank Drive Bridle Track Special Wildlife Site (SWS)" (SP06/30) formed part of the site. This section alone was subject to an assessment using the Special Wildlife Site Criteria.

### 3.2 Site Description

The site consists of approximately 14.7ha of low-lying land forming a triangle between the residential suburb of Winyates Green and the two main roads; the A4023 and A435 (please refer to Appendix 1 for a site plan and Appendix 2 for site photographs).

The majority of the land consists of old permanent agricultural grassland divided by a number of hedges with an old wooded lane (Ravensbank Drive Bridle Track SWS) forming the western boundary of this triangle. Amenity grassland and more recent woodland planting follow either side of Far Moor Lane; the access road to the residential housing that forms the south-western boundary of the site.

### 3.3 Phase 1 Habitat Survey

Please refer to Appendix 1 for a phase 1 habitat survey map showing the location and classification of all habitats within the site (the fields are clearly labelled using an alphabetical system).

**Semi-improved neutral grassland.** Almost all of the grassland appears to be under extensive pastoral management, possibly with some of the fields (Fields F & G) being shut up for hay. The composition throughout these fields is rather inconsistent varying between semi-improved neutral grassland and good semi-improved neutral grassland. At least in some smaller pockets, usually closer to the margins the composition appears unimproved, although at the time of the survey in late April many species associated with unimproved grasslands are not yet evident. Transitions into marshy grassland frequently occur, more often towards the lower lying western margins.

The more common grasses include crested dog's-tail *(Cynosurus cristatatus),* meadow foxtail *(Alopecurus pratensis),* Yorkshire fog *(Holcus lanatus),* sweet vernal grass *(Anthoxanthum odoratum),* red fescue *(Festuca rubra)* and common bent *(Agrostis capillaris)* with wetter areas supporting creeping bent *(Agrostis stolonifera)* and clumps of tufted hair-grass *(Deschampsia cespitosa).* Soft rush *(Juncus effusus)* and more occasionally hard rush are also a scattered component of these marshier conditions. Common herbs found consistently throughout include creeping and meadow buttercup *(Ranunculus repens* & *R. acris),* white clover *(Trifolium repens),* creeping cinquefoil *(Potentilla reptans),* common vetch *(Vicia sativa),* common sorrel *(Rumex acetosa),* and hogweed *(Heracleum sphondylium),* however, notable plants indicative of unimproved conditions have a patchier distribution, in all probability growing on soils of lower fertility. Within this category are common knapweed *(Centaurea nigra),* bird's-foot trefoil *(Lotus corniculatus),* field woodrush *(Luzula campestris),* lesser stitchwort *(Stellaria graminea),* cowslip *(Primula veris)* and bulbous buttercup *(Ranunculus bulbosus).* Field G at the southern end of the compartment supports locally-frequent pignut *(Conopodium majus)* and a number of adders-tongue fern plants were recorded towards the western side of field E (please refer to plates 2 and 3 of Appendix 2 for images of field E). The mosses *Brachythecium albicans* and *Eurhynchium praelongum* are relatively frequent throughout.

Plants indicative of damper ground include meadow vetchling *(Lathyrus pratensis),* hairy sedge *(carex hirta),* cuckoo flower *(Cardamine pratensis),* great burnet *(Sanguisorba officinalis)* and greater bird's-foot trefoil *(Lotus pedunculatus).* Often the moss *Calliergon cuspidatum* frequents these damper areas.

Species-poor areas, including recently disturbed ground often support broad-leaved dock *(Rumex obtusifolius)* and common nettle *(Urtica dioica)*- the latter frequenting some of the margins alongside the hedgerows.

**Amenity grassland.** This grassland habitat follows either side of Far Moor Lane, including on the western side, a raised bund (please refer to plate 15 of Appendix 2 for photographs). The composition tends to be species-poor with frequent perennial rye-grass *(Lolium perenne),* Yorkshire fog, and common herbs including daisy *(Bellis perennis),* dandelion *(Taraxacum* agg), creeping buttercup, meadow buttercup and

white clover. This said, a number of more notable species can be found, sometimes close to the wooded lane but also along the raised bund. These plants which only occur at best occasionally, include bird's-foot-trefoil, knapweed, field woodrush and black medick *(Medicago lupulina).* Daffodils *(Narcissus* sp) form an ornamental strip along sections of the raised bund.

**Scattered and dense scrub.** Scrub for the most part has encroached along a number of hedgerow boundaries, largely in the form of blackthorn *(Prunus spinosa)* but also including the occasional elder *(Sambucus nigra)* and hawthorn *(Crataegus monogyna)* as well as scattered trees. The density of this scrub is variable but in places has become impenetrable, now cloaking sections of some of the hedgerows (please refer to plate 9 and 14 of Appendix 2 for images of blackthorn scrub).

**Running water.** Two narrow streams intersect the site running along hedgerow boundaries and then following the wooded lane north along the western boundary (please refer to plates 7, 8 and 11 of Appendix 2 for photographs). The stream that follows hedgerow 3 is at first shallow towards the eastern end but soon cuts deeply within the dense scrub further west, becoming shallower again towards the western end. The other narrow stream that follows Hedgerow 1 is less deeply incised. The substrate along these streams is a mixture of pebbles, fine gravel and silt with the vegetation within the stream including frequent flote grass *(Glyceria fluitans),* fools water-cress *(Apium nodiflorum),* brooklime *(Veronica beccabunga)* and the occasional watercress, *(Rorippa nasturtium-aquaticum).* Marginal vegetation on slightly drier ground includes water figwort *(Scrophularia aquatica),* square-stalked St. John's-wort *(Hypericum tetrapterum),* wild angelica *(Angelica sylvestris),* great willowherb *(Epilobium hirsutum)* and wavy bitter-cress *(Cardamine flexuosa)* with the occasional record for great burnet-saxifrage *(Pimpinella major).*

**Still water**. There are two ponds on site located within field F close to hedgerow 5 (. Both are very overgrown, however, pond 1 is almost deficient of water with a small puddle remaining below a dense canopy of crab apple *(Malus sylvestris),* bramble *(Rubus fruticosus),* elder, hawthorn and blackthorn. Marginal plants beneath the canopy include locally-abundant floating sweet-grass *(Glyceria fluitans)* and creeping buttercup. Dumping of refuse, including tyres has taken place around and within this pond.

Pond 2, which is located further east, retains a large body of water but is nevertheless very shaded with hawthorn, bramble and the occasional ash *(Fraxinus excelsior)* tree (please refer to plate 4 of Appendix 2 for photographs). A collapsed grey willow *(Salix cinerea)* has fallen across the pond and due to shading, the marginal vegetation is very limited.

**Scattered trees.** Almost all of the trees, of which some are of veteran status, occur along the hedgerows or along the wooded lane, except for one old veteran pedunculate oak *(Quercus robur)* tree, situated near the eastern end of Hedgerow 3 in field E. This hollow tree, which supports a number of holes, has unfortunately been set fire to in more recent years and is in a poor state (See appendix 2). Some of the veteran trees, located near to, or within the northern end of the SWS, are very old and of significant wildlife interest. Please refer to plates 5, 6, 12 and 13 of Appendix 4 for photographs of veteran trees).

**Broadleaved plantation.** All of the broadleaved plantation is of recent origin, intermittently following either side of Far Moor Lane. The canopy is largely made up of semi-mature field maple and ash with frequent hawthorn and blackthorn over a typically poor ground flora supporting abundant ivy *(Hedera helix),* frequent cleavers *(Galium aparine),* common nettle *(Urtica dioica)* and lesser celandine *(Ranunculus ficaria).* Ornamental willows *(Salix* sp) *and* hazel also form solitary stands along these broad verges.

**Hedgerows.** Apart from the more recent hedgerow that follows the main roads, all of the other hedgerows that border and intersect these small fields can be described as ecologically important.

Using the Hedgerow Regulations (1997) criteria, **hedgerows 1** (plate 8, Appendix 2), **2, 3** (plate 7, Appendix 2)**, 5 and 7 are recognised as important** whilst hedgerows 4 and 6 narrowly fall short of being assessed as important.

All of the hedgerows are unmanaged, overgrown and in places gappy. The ground flora and species diversity remains high with shrubs including frequent common and midland hawthorn *(Crataegus laevigata),* blackthorn, English elm *(Ulmus procera),* dog and field rose *(Rosa canina* & *R. arvensis)* and less frequently holly *(Ilex aquifolium),* hazel *(Corylus avellana),* crab apple *(Malus sylvestris),* ash *(Fraxinus excelsior),* field maple *(Acer campestre)* and pedunculate oak. A number of these trees, particularly oak and ash occur as standard trees. The ground flora often reflects that of ancient woodlands with frequent bluebell *(Hyacinthoides non-scripta)* and occasional wood avens *(Geum urbanum),* herb robert *(Geranium robertianum),* cuckoo pint *(Arum maculatum),* male fern *(Dryopteris filix-mas),* harts-tongue fern *(Phyllitis scolopendrium),* common dog violet *(Viola riviniana)* and dog's mercury *(Mercurialis perennis).* Of particular note is Goldilocks buttercup *(Ranunculus auricomus),* which was found along hedgerow 7. A summary of each hedgerow using the hedgerow regulations criteria can be found in Table 1.

**Table 1:**

| | **Hedgerows** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Features** | H 1 | H2 | H 3 | H4 | H 5 | H6 | H7 | H8 |
| Bank or wall which supports the hedgerow along at least one half of its length | | | | | | | | |
| Gaps which in aggregate do not exceed 10% of the length of the hedgerow | | | | | | Y | Y | Y |
| At least 1 standard tree in a 50m length | Y | Y | Y | Y | Y | Y | Y | Y |
| At least 3 ground flora species listed in schedule 2. | Y | Y | Y | Y | | Y | Y | Y |
| A ditch along at least one half of the length of the hedgerow | Y | Y | Y | Y | Y | | | |
| A parallel hedge within 15m of the hedgerow | N | | | | Y | | | |
| Connections scoring 4 points | | | | | Y | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No. of woody species | 7 | 6 | 7 | 5 | 6 | 5 | 6 | 3 |
| Protected species | | | | | | | | |
| **Does the hedgerow qualify** | **Y** | **Y** | **Y** | **N** | **Y** | **N** | **Y** | **N** |

**Semi-natural broadleaved woodland.** Most of the wooded lane forms part of the "Ravensbank Drive Bridle Track" Special Wildlife Site, last surveyed in June 2009 and relisted later that year having met the relevant criteria for inclusion. In this case the site was assessed against the hedgerow criteria.

This is an old double-banked lane that is almost entirely overgrown, forming a linear stretch of woodland approximately 650m in length and 0.5ha's in size.

The drier banks support standard oak and ash trees, some of which are clearly of veteran status. The understory includes occasional field maple, scattered English elm, hawthorn and areas supporting neglected hazel coppice. Blackthorn has become particularly invasive, suckering throughout the lane and forming dense stands along the boundary of the woodland. Much of this scrub occurs outside the designation of the wildlife site. The ground flora varies largely between drier ground on the banks with ivy, bluebell, greater stitchwort *(Stellaria holostea)* and locally-frequent dogs mercury *(Mercurialis perennis)* to wetter ground that follows the narrow and shaded stream that runs almost the length of the lane. Damper ground between the scrub supports frequent meadowsweet *(Filipendula ulmaria),* creeping buttercup, wavy bitter-cress, great willowherb *(Epilobium hirsutum),* pendulous sedge *(Carex pendula)* and wild angelica *(Angelica sylvestris).*

A number of ferns were also recorded, largely from the banks, including lady fern *(Athyrium filix-femina),* male fern *(Dryopteris filx-mas),* broad buckler-fern *(Dryopteris dilatata),* hart's tongue fern *(Phylittus scolopendrium),* common polypody *(Polypodium vulgare)* and soft-shield fern *(Polystichum setiferum).* Other notable plants associated with ancient woodlands include remote sedge *(carex remota),* wild strawberry *(Fragaria vesca)* and wood melick *(Melica uniflora).*

Tarmac has been laid along part of the footpath along the southern section of the site whilst a small section adjoining residential housing in the same location has been planted with a number of exotic species (see appendix 2).

It is of note that some of the woodland outside and adjoining the boundary of the special wildlife site is of similar floristic interest. Notably, a small block at the north western end of the lane, adjoining the stream supports two large veteran oak trees above a typical ancient woodland ground flora supporting bluebell, yellow archangel *(Lamiastrum galeobdolon),* pignut, greater stitchwort and wood millet *(Milium effusum).* The banks of the deeply incised stream also support a number of ferns.

**Table 2**. Showing the results of the criteria assessment for Ravensbank Drive Bridle Track. See appendix 3 for a description of Criteria and appendix 6 for a full list of species recorded in this part of the woodland. (Note: hedgerow sites scoring 13 points or more are selected as Special Wildlife Sites.)

| **Criteria** | **Points** |
|---|---|
| Size | 3 |
| Rarity (species) | 2 |
| Rarity (habitat) | 3 |
| Diversity (species) | 1 |
| Diversity (habitat) | 3 |
| Naturalness | 2 |
| **Total** | **14** |

### 3.4 Great-Crested Newts

Both of the ponds described in section 3.3 are rather shaded, eutrophic, and in the case of pond 1, almost deficient of water. This said, the presence of some marginal vegetation, wide availability of suitable foraging, good connectivity and the fact that smooth newt adults and great crested newt eggs have been recorded from these ponds in a previous survey undertaken in 1999, means that a dedicated great crested newt survey is recommended during the late spring and summer months to ascertain presence/absence of these amphibians.

### 3.5 Reptiles

In relation to the agricultural fields, the presence of reptiles is considered unlikely, largely as they are subject to seasonal grazing resulting in a relatively short and a frequently trampled sward. The damp nature of much of the sward can also be regarded as sub-optimal for slow-worms, a species that has a tendency for drier ground and denser grassland swards. The narrow woodland, at least for common lizard and slow-worm, is also considered sub-optimal as dry habitat is only restricted to the banks and this is very shaded and overgrown. The only reptile that may potentially occur on site is grass snake, a species that is less likely to be found within the fields but could potentially inhabit the more secluded areas along the parts of the stream and around the ponds.

### 3.6 Birds

A number of common and widespread birds were encountered during the assessment however, a site such as this that includes a diversity of habitats including, scrub, woodland, hedgerows, scattered trees, semi-natural grassland and riparian habitats, all of which occur in close proximity to one another, will provide nesting habitat and foraging for a number of common and widespread breeding birds as well as some that are more specific to semi-natural habitats such as woodland. A few of the birds that appeared to be breeding on site at the time of the survey include chiffchaff *(Phylloscopus collybita),* whitethroat *(Sylvia communis),* greenfinch *(Chlamydotis undulata),* wren *(Troglodytes troglodytes),* song thrush *(Turdus philomelos),* wood pigeon *(Columba palumbus)* and dunnock *(Prunella modularis).*

### 3.7 Bats

A number of trees that run along the length of the wooded lane and possibly a few of the isolated standard trees offer suitable roosting opportunities for bats. These largely include mature (and is some cases veteran) pedunculate oaks as well as the occasional mature ash tree (plates 6, 12 and 13 of Appendix 2 for images). A singular veteran (and partly burnt out) oak close to hedgerow 3 at the north-eastern end of field E supports a number of holes that could also potentially be used as a roost (plates 5 and 6 of appendix 2), however, other semi-mature and mature trees along the hedgerows appear largely devoid of suitable cracks or holes.

The diversity and connectivity of semi-natural habitats including scrub, woodland, hedgerows, scattered trees, semi-natural grassland and riparian habitats will provide optimal conditions for foraging and enable dispersal for bats over the wider countryside

*NB: There are no buildings on the site and therefore no buildings were assessed for bats.*

### 3.8 Badgers

It would appear that no badger setts occur on site, although one hole that was found along the track close to hedgerow 7 has a remote possibility of having been used by badgers. However, the use of this hole by badgers is considered unlikely due to the absence of any evidence, i.e, guard hairs and latrines in the area, and the fact that this single hole appeared smaller than average. It is considered more likely that the hole (if in use at all) has been used by fox *(Vulpes vulpes),* and indeed one was seen not far away along hedgerow 8. It should be noted that some areas of dense bramble and blackthorn were not fully accessible, and indeed although there was no evidence (such latrines or snuffle holes) of badgers on site, badgers are common in the countryside and may well forage on site, even if they are not resident.

### 3.9 White–Clawed Crayfish

The low flowing and shallow streams that support very little refugia, are considered unsuitable for white-clawed crayfish.

### 3.10 Water Voles

The ponds and the streams that intersect the fields and follow the wooded lane appear largely unsuitable for water voles owing largely to a distinct lack of marginal vegetation made somewhat less inhospitable due to the low-flowing shallow water (less than 3cm depth). This said, water voles have been recorded within the Redditch area and less than 2km from this location, and as such there remains a remote possibility of them inhabiting part of this site.

### 3.11 Otters

The brook is very shallow and narrow and is therefore unlikely to support otters.

### 3.12 Dormice

Although apparently unrecorded from west of the River Severn in Worcestershire, the wooded lane with dense shrub and occasional hazel coppice and honeysuckle *(Lonicera periclymenum),* offers suitable habitat for dormice.

## 4 CONCLUSIONS AND RECOMMENDATIONS

### 4.1 Phase 1 Habitat Survey

From an ecological context, the site supports an interesting mosaic of semi-natural habitats including good semi-improved neutral grassland, scrub, veteran standard trees, semi-natural broadleaved woodland, streams, ponds and species-rich hedgerows, many of which are recognised for their nature conservation value within the Worcestershire Biodiversity Action Plan including ancient and species-rich hedgerows, semi-natural grassland, scrub, woodland, veteran trees and rivers & streams. Please refer to Appendix 1 for a site plan showing the location and classification of these habitats. Furthermore, most of the hedgerows are recognised as important when assessed against the hedgerow regulations (1997) criteria. Similarly the larger part of the wooded lane known as “Ravensbank Drive Bridle Track” meets the Special Wildlife Site criteria, even when assessed in isolation from the remainder of the site.

Of less conservation interest are the poorer areas of semi-improved neutral grassland within the fields and the amenity grassland that runs either side of Far Moor Lane.

For this site, it is unlikely that a large-scale development could be adequately incorporated without a significant loss and/or affect to the semi-natural habitats. A smaller development, if adequately located on poorer grassland, whilst minimising damage to, and retaining where possible woodland, hedgerows, ponds and stream habitat, would have a significantly lower impact.

### 4.2 Great crested newts

The site does support two ponds pond which are reported to contain great crested newts during the breeding season.

As a result it is recommended that **dedicated great crested newt presence/absence surveys are undertaken on the pond**. This will establish whether great crested newts are indeed present on the site. Great crested newt surveys require a minimum of **four visits** to be undertaken by a suitably experienced and licensed great crested newt surveyor **between late March and mid/late June** of any given year (two of these surveys must be undertaken between mid April to mid May). Great crested newt surveys must be undertaken at this time of year to adhere to best practice guidelines and satisfy the local planning authority requirements.

Should great crested newts be found to be present in the pond further visits may be required before the end of June to estimate the size of the population. Population size estimates are a mandatory requirement of the licence application process. If great

crested newts are present then once planning permission is granted and prior to the development of the site, a Natural England development licence in respect of a European protected species may need to be sought. If a licence is required a detailed mitigation statement will need to be prepared and submitted alongside the licence application. This will require detailed mitigation in order to ensure that the favourable conservation status of great crested newts is maintained and enhanced.

### 4.3 Reptiles

The habitats on site are considered sub-optimal and unlikely to support slow-worm and common lizard. The sites does, however, support some limited habitat for grass snakes and therefore **there are potentially implications** under the Wildlife and Countryside Act 1981. This said, it is not considered that there is any need for further dedicated surveys as this species is difficult to survey due to its large home range of up to 2km². However, if works take place during the active period rather than during the hibernation period of October to April then any snakes present will usually disperse away from disturbance.

### 4.4 Birds

Owing to the diversty of semi-natural habitats, the site clearly offers suitable nesting and foraging habitat many common and widespread birds, as well as birds that are more often restricted to a particular semi-natural habitat such as broadleaved woodland. The retention and management of these habitats within any proposed development is therefore recommended.

Should any nesting habitats require removal or disturbance, care should be taken to ensure that nesting wild birds remain undisturbed during any clearance work. The removal or destruction of suitable breeding habitat should occur outside the breeding season, which for common species occurs from **early March until late August**. Should any work on the site be undertaken during these months then a suitably qualified ecologist must be engaged prior to commencement in order to check for nesting birds and advise accordingly on the most appropriate way to proceed.

### 4.5 Bats

A number of trees offer suitable roosting opportunities for bats, particularly the older veteran trees along the wooded lane.

**Owing to the complexity of the habitat, a transect survey is recommended at the appropriate time of year (early/mid May– September) prior to any works taking place**.

Bat surveys will consist of a transect walk and static fixed point surveys on relevant features undertaken over two evenings approximately 1 week apart. They should be undertaken by a team of surveyors, to establish a baseline of how the site is being used by bats and to ascertain whether any key features i.e trees, are being used as roosts and if so what species are present. Please note the numbers of surveys and surveyors should be in accord with the *Bat Survey Guidelines – Bat Conservation*

*Trust, July 2007*. At least one of the surveyors will be hold a Natural England bat license.

### 4.6 Badgers

Although from this survey it would appear that badgers are not resident on site, there remains a possibility of badgers inhabiting a single hole found on the periphery of the site or in areas where the scrub was particularly impenetrable **To fully ascertain the status of badgers on site, a dedicated survey is therefore recommended.**

Badger surveys would be initially based on searching for evidence of badger activity on the site in the forms of setts, tracks, footprints, hairs and latrines, should an active sett/s be found a period of monitoring would be required to ascertain how the sett is being used, this would be based on bi monthly visits between April 2010 and March 2011.

### 4.7 White – Clawed Crayfish

The brook is unlikely to support white-clawed crayfish. **Therefore, there are no obvious and immediate implications regarding this species on site.**

### 4.8 Water Voles

Although the streams are recognised as sub-optimal for water voles, they have been recorded in the area and as such there remains a remote possibility of water voles inhabiting the riparian habitats that occur on site. Therefore, **a dedicated water vole survey is recommended during the late spring and late summer months (March to October (inclusive)) to ascertain presence/absence.**

### 4.9 Otters

The streams are unlikely to support otters. **Therefore, there are no obvious and immediate implications regarding this species on site.** In the unlikely event that an otter is observed using the brook work should cease immediately and a suitably qualified ecologist must be contacted.

### 4.10 Dormice

Although dormice are very rare in this part of Worcestershire, there remains a remote possibility of them inhabiting the woodland and possibly hedgerow habitat. **At this stage, no further surveys are recommended for this species**, however, should any of the relevant wooded habitat undergo disturbance, then a dedicated survey is recommended to ascertain the presence/absence of dormice.

### 4.11 Other wildlife and considerations

The mosaic of semi-natuiral habitats and diversity of plants are clearly important for a diversity of wildlife including small mammals and invertebrate life. A few butterflies that were recorded during the survey include orange tip *(Anthocharis cardamines),*

speckled wood *(Pararge aegeria)*, small tortoiseshell *(Aglais urticae)* and peacock *(Inachis io).*

It is of note that the running water on site flows west into Ipsley Alders Marsh Site of Special Scientific Interest and that development on this site could potentially have hydrological and ecological implications for this important wetland reserve. However, it is beyond the scope of the present survey remit to comment any more fully on this.

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Worcestershire Biodiversity Action Plans.
http://www.worcestershire.gov.uk/cms/environment-and-planning/biodiversity.aspx

## Appendix 1 – Site plan


Winyates Triangle Phase 1 habitat map

WORCESTERSHIRE wildlife CONSULTANCY

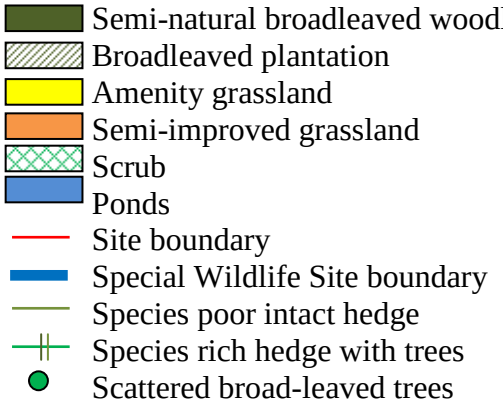

www.worcestershirewildlifeconsultancy.org Tel 01905 754909

Scale:
Main Map: 1:1750
Inset Map: 1:2,500,000

Produced
April 2010

N

Key


Semi-natural broadleaved woodland
Broadleaved plantation
Amenity grassland
Semi-improved grassland
Scrub
Ponds
Site boundary
Special Wildlife Site boundary
Species poor intact hedge
Species rich hedge with trees
Scattered broad-leaved trees

## Appendix 2 – Site Photographs

**Plate 1. View west across field B.**

**Plate 2. Cowslips in field E.**

**Plate 3. Adders-tongue fern in field E.**

**Plate 4. Pond 2.**

**Plate 5. Burnt veteran oak in field E.**

**Plate 6. Large hole in a branch in the same tree.**

**Plate 7. Stream running adjacent to hedgerow 3.**

**Plate 8. Stream running along hedgerow 1.**

**Plate 9. Blackthorn scrub between field C and D.**

**Plate 10. Gardened area and tarmac path at the southern end of the wooded lane (Ravensbank Drive Bridle Track).**


**Plate 11. The stream at the northern end of the wooded lane (Ravensbank Drive Bridle Track).**

**Plate 12. Veteran oak tree at the northern end of the wooded lane.**

**Plate 13. Veteran ash pollard near the northern end of the wooded lane.**

**Plate 14. Looking north, showing the encroaching blackthorn scrub bordering the wooded lane (Ravensbank Drive Bridle Track).**

**Plate 15. Looking north, showing the amenity grassland along Far Moor Lane.**

## Appendix 3 – Special Wildlife Site habitat criteria - hedgerows

(Note: Ignore section numbering)
The abbreviated Habitat Criteria, for use in the field, are shown in table 11 on page 89. The habitat criteria given in detail below do not cover all the habitats for which Special Wildlife Sites can be selected. This is because some habitats are not suitable for inclusion in the basic system outlined (for example reedbeds and orchards). In such cases the appropriate methods of site selection are given in sections 4.8 to 4.13. When new information becomes available in the future the system will be refined to ensure that sites are always selected on the most up to date information available.

There are a number of presumptions made in the habitat criteria sections of the Special Wildlife Site system. These apply to all the habitats and so are outlined below.

- All habitats chosen must be of a sustainable size in order to be included in the Special Wildlife Site system.
- **All species used in the selection process must be an integral part of the habitat in question and aliens will not be included in the species diversity lists.**
- In some cases Worcestershire Red Data Book species will be found on a site but may not be part of the habitat for which the site is being selected (and therefore not on the species lists used for that habitat). In such cases they will be highlighted, but only included in the selection procedure where they add to the value of the habitat for which the site is selected.
- The boundaries of Special Wildlife Sites will be decided by the limit of the interest for which the site is being selected unless there is good reason to select a larger area. This would be the case where three quarters of a field was of Special Wildlife Site quality but the final quarter was not, for example. In such cases it would be sensible to select the whole field. Were a subsequent application for development to arise, the lack of interest on some parts of a site should be taken into account as appropriate.
- Sites that border Sites of Special Scientific Interest, but are in their own right small or fragmented should include the area of the Site of Special Scientific Interest within their boundary. Sites that are wholly Sites of Special Scientific Interest will not be included in the Special Wildlife Sites list. This was considered appropriate as Sites of Special Scientific Interest are already protected under law and it was felt that to include them unnecessarily would overburden the system.
- Woodland, grassland, hedgerow, and marshland sites scoring 13 points or more will be selected as Special Wildlife Sites. Those scoring 9 to 12 points will move onto the secondary criteria. Sites scoring 8 points or less will be rejected outright.
- Open water and mosaic sites scoring 10 points or more will be selected as Special Wildlife Sites. Those scoring 6 to 9 points will move onto the secondary criteria. Sites scoring 5 points or less will be rejected.

Sites should be selected using the most up to date data available. Where sufficient data is not available sites should be re-surveyed or not selected. Habitat surveys should be carried out to Phase 2 or National Vegetation Classification level and a programme of rolling survey should ensure that data is kept as up to date as possible.

Any hedge scoring 13 points or more against the following criteria will be selected as Special Wildlife Sites.

**4.2.1 Size**

1 Point 20 to 50 metres in length
2 Points 50 to 100m in length
3 Points Over 100m in length

The minimum size used in this criterion reflects the size qualification used in the 1997 hedgerow legislation for important hedgerows. Given the linear nature of this habitat it was decided that in order to gain a 3 point score in this section the hedge would need to be very substantial, hence the large size qualification needed. No indication of the width of hedge needed to qualify is given as it was decided that this would be too variable a criterion to use successfully.

**4.2.2 Rarity (Species)**

1 Point No uncommon species from table 5 occurs.
2 Points Uncommon species from table 5 occurs.
3 Points Red Data Book or Rare Species from table 5 occurs.

The scores shown above will be given to a site if any species from the lists occur anywhere in the hedge or hedge bottom.

**4.2.3 Rarity (Habitat)**

1 Point Post Enclosure hedge.
2 Points Enclosure hedge.
3 Points Pre Enclosure hedge

Due to the difficulties of classifying hedges by rarity of type the Criteria Group agreed that they should be classified by their likely ages. Therefore the classification shown above was adopted. It was felt that this more accurately reflected the value of a hedge from a habitat point of view than other classification methods.

**4.2.4 Diversity (Species)**

1 Point 2 to 4 species from table 5 per 30m
2 Points 5 to 7 species from table 5 per 30m
3 Points 8 or more species from tables 5 per 30m

It was felt that these thresholds represented a fair reflection of the relative value of hedgerows in Worcestershire based on known examples and the guidance given in the Hedgerows Regulations (1997). In cases where a Red Data Book species occurs but is not on the list a case must be made for its inclusion as part of the intrinsic habitat of the hedge or hedge bottom before it can be included.

The 30m section of hedgerow to be assessed for species diversity should be chosen according to the Hedgerow regulations (1997) which means that:

- Where the length of the hedgerow does not exceed 30m the full length should be checked for the species of interest.
- Where the hedge is between 30m and 100m the central stretch of 30m should be checked.
- Where the hedge is between 100m and 200m the central 30m stretch of each half should be checked and the aggregate score divided by 2.
- Where the length of the hedge exceeds 200m the central stretch of each third of the hedge should be checked and the aggregate divided by three.

**4.2.5 Diversity (Habitat)**

1 Point One distinct feature in the hedgerow
2 Points 2 or 3 distinct features in the hedgerow
3 Points 4 or more distinct features in the hedgerow

As hedgerow habitat is rather difficult to pin down to National Vegetation Classification or other communities it was felt that using physical features known to be representative of long established hedges would be more useful for this criterion.

Features to be used are: -

| | |
|---|---|
| Banks | Badger Sett |
| Ditches | Veteran Tree |
| Walls | Nest site of scarce species (e.g. Heronry) |
| Standard trees or pollards | Junctions with other hedges |
| Adjacent semi natural habitats | |

The Criteria Group felt that a combination of several of these features would point towards a hedge being of substantial quality from a wildlife perspective and would therefore be a fair method by which to classify hedges in the county context.

**4.2.6 Naturalness**

1 Point At least some evidence of semi natural character, e.g. standard tree.
2 Points Predominantly semi natural in character
3 Points Absence of any modification to the semi natural character of the hedge, e.g. whole range of features, traditional management

Considering that the bulk of the hedges in the county are intensively managed it was considered necessary to include traditional management as a feature under this criterion. However those hedges that are of little intrinsic value because they have been excessively mechanically trimmed into a very small, thin style would score no points at all as their value for wildlife would probably be very low.

**Vascular plant species found in hedgerows in Worcestershire.**

| Latin Name | Common Name | Status |
|---|---|---|
| *Acer campestre* | Field Maple | |
| *Adoxa moschatellina* | Moschatel | |
| *Allium ursinum* | Ramsons | |
| *Alnus glutinosa* | Alder | |
| *Anemone nemorosa* | Wood Anemone | |
| *Arum maculatum* | Lords-and-ladies | |
| *Athyrium filix-femina* | Lady-fern | |
| *Betula pendula* | Silver Birch | |
| *Betula pubescens* | Downy Birch | |
| *Blechnum spicant* | Hard-fern | Uncommon |
| *Brachypodium sylvaticum* | Slender False-brome | |
| *Bromus ramosus* | Hairy-brome | |
| *Campanula latifolia* | Giant Bellflower | |
| *Carex sylvatica* | Wood Sedge | |
| *Carpinus betulus* | Hornbeam | |
| *Circaea lutetiana* | Enchanter's Nightshade | |
| *Cornus sanguinea* | Dogwood | |
| *Coryllus avellana* | Hazel | |
| *Crataegus laevigata* | Midland Hawthorn | |
| *Crataegus monogyna* | Hawthorn | |
| *Cytisus scoparius* | Broom | |
| *Daphne laureola* | Spurge Laurel | |
| *Dryopteris affinis* | Scaly Male-fern | Uncommon |
| *Dryopteris carthusiana* | Narrow Buckler-fern | |
| *Dryopteris dilatata* | Broad Buckler-fern | |
| *Equisetum sylvaticum* | Wood Horsetail | Uncommon |
| *Euonymus europaeus* | Spindle | |
| *Euphorbia amygdaloides* | Wood Spurge | |
| *Fagus sylvatica* | Beech | |
| *Festuca gigantea* | Giant Fescue | |
| *Fragaria vesca* | Wild Strawberry | |
| *Frangula alnus* | Alder Buckthorn | Uncommon |
| *Fraxinus excelsior* | Ash | |
| *Galium odoratum* | Woodruff | |
| *Galium saxatile* | Heath Bedstraw | |
| *Geranium robertianum* | Herb-Robert | |
| *Geum urbanum* | Wood Avens | |
| *Hyacinthoides non-scripta* | Bluebell | |
| *Ilex aquifolium* | Holly | |
| *Lamiastrum galeobdolon* | Yellow Archangel | |
| *Lathraea squammaria* | Toothwort | Uncommon |
| *Luzula pilosa* | Hairy Wood-rush | |
| *Luzula sylvatica* | Great Wood-rush | |
| *Lysimachia nemorum* | Yellow Pimpernel | |
| *Malus sylvestris* | Crab Apple | |
| *Melampyrum pratense* | Common Cow-wheat | |
| *Melica uniflora* | Wood Melick | |
| *Mercurialis perennis* | Dog's Mercury | |

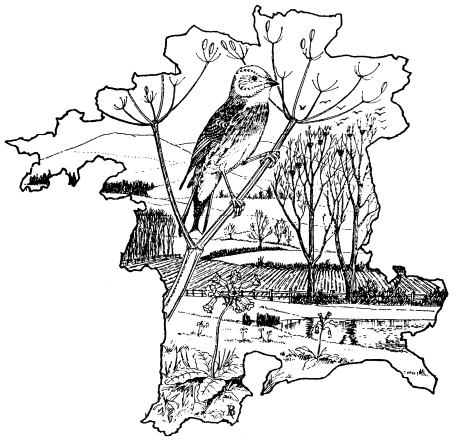
| | | |
|---|---|---|
| *Millium effusum* | Wood Millet | |
| *Orchis mascula* | Early-purple Orchid | |
| *Oxalis acetosella* | Wood Sorrel | |
| *Poa nemoralis* | Wood Meadow-grass | |
| *Populus nigra var. betulifolia* | Black Poplar | Uncommon |
| *Populus tremula* | Aspen | |
| *Potentilla erecta* | Tormentil | |
| *Potentilla sterilis* | Barren Strawberry | |
| *Primula vulgaris* | Primrose | |
| *Prunus avium* | Wild Cherry | |
| *Prunus spinosa* | Blackthorn | |
| *Pteridium aquilinum* | Bracken | |
| *Quercus petraea* | Sessile Oak | |
| *Quercus robur* | Pedunculate Oak | |
| *Rhamnus cathartica* | Buckthorn | |
| *Ribes nigrum* | Black Currant | |
| *Ribes sylvestre* | Red Currant | |
| *Ribes uva-crispa* | Gooseberry | |
| *Rosa arvensis* | Field Rose | |
| *Rosa canina* | Dog Rose | |
| *Rosa obtusiflora* | Round Leaved Dog Rose | Uncommon |
| *Rosa rubiginosa* | Sweet Briar | Status uncertain |
| *Rosa sheradii* | Sherards' Downy Rose | Uncommon |
| *Rosa stylosa* | Short Styled Field Rose | Uncommon |
| *Salix alba* | White Willow | |
| *Salix caprea* | Goat Willow | |
| *Salix cinerea* | Grey Willow | |
| *Salix fragilis* | Crack Willow | |
| *Salix triandra* | Almond Willow | |
| *Salix viminalis* | Osier | |
| *Sambucus nigra* | Elderberry | |
| *Sanicula europaea* | Sanicle | |
| *Sorbus aucuparia* | Rowan | |
| *Sorbus torminalis* | Wild Service Tree | |
| *Stellaria holostea* | Greater stitchwort | |
| *Taxus baccata* | Yew | |
| *Teucrium scorodonia* | Wood Sage | |
| *Tilia cordata* | Small leaved lime | |
| *Tilia platyphyllos* | Large-leaved Lime | Red Data Book |
| *Ulex europaeus* | Gorse | |
| *Ulex gallii* | Western Gorse | |
| *Ulmus glabra* | Wych Elm | |
| *Ulmus holandia* | Dutch Elm | |
| *Ulmus procera* | English Elm | |
| *Veronica montana* | Wood Speedwell | |
| *Viburnum lantana* | Wayfaring-tree | Uncommon |
| *Viburnum opulus* | Guelder Rose | |
| *Viola odorata* | Sweet Violet | |
| *Vicia sepium* | Bush Vetch | |

Status codes.

| | |
|---|---|
| Red Data Book | - Species occurs in the Worcestershire Red Data Book. |
| Rare | - Species occurs in 1-15 extant sites according to the Day checklist. |
| Uncommon | - Species occurs in 16-50 extant sites according to the Day checklist. |

The status of the plant species listed above was gleaned from the Worcestershire Red Data Book and J. Day's checklist for the county flora (1988).

**Appendix 4 – Results from data search**




# Worcestershire Biological Records Centre

*Lower Smite Farm,*
*Smite Hill, Hindlip, Worcester, WR3 8SZ*
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*Web site www.wbrc.org.uk*


**Bat species records held by WBRC as at 20/04/10 for 2km radius around SP084682 (Ref: 2010/050).**

| Scientific Name | Common Name | [redacted] | Location Name | Date | Status | Comments |
|---|---|---|---|---|---|---|
| *Arvicola terrestris* | Water Vole | [redacted] | Holt End Meadows | June 2004 | WCA5(S9(4a, 4b)), NERC s.41, Worcs BAP | |
| *Bufo bufo* | Common Toad | [redacted] | Ipsley Alders Marsh | 28/04/1996 | BC3 WCA5(S9(5)), NERC s.41 | |
| *Bufo bufo* | Common Toad | [redacted] | Ipsley Alders Marsh | 04/07/1998 | BC3 WCA5(S9(5)), NERC s.41 | DAFOR |
| *Bufo bufo* | Common Toad | [redacted] | Ipsley Alders Marsh | 13/06/1999 | BC3 WCA5(S9(5)), NERC s.41 | |
| *Bufo bufo* | Common Toad | [redacted] | Ipsley Alders Marsh | 02/07/1999 | BC3 WCA5(S9(5)), NERC s.41 | Compartment 22; 1 adult |
| *Bufo bufo* | Common Toad | [redacted] | Ipsley Alders Marsh | 12/10/2003 | BC3 WCA5(S9(5)), NERC s.41 | |
| *Coenonympha pamphilus* | Small Heath | [redacted] | Pink Green | 1997 | NERC s.41 | |
| *Dendrocopos minor* | Lesser Spotted Woodpecker | [redacted] | Ipsley Alders Marsh | 20/08/2005 | BC2, NERC s.41 | Juvenile |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Dendrocopos minor* | Lesser Spotted Woodpecker | [redacted] | Ipsley Alders Marsh | Oct 2005 | BC2, NERC s.41 | |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | 04/07/1998 | BC2, NERC s.41, Worcs BAP | DAFOR |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | 05/07/2004 | BC2, NERC s.41, Worcs BAP | |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | 04/08/2004 | BC2, NERC s.41, Worcs BAP | scrub |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | Feb 2005 | BC2, NERC s.41, Worcs BAP | 2 |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | April 2005 | BC2, NERC s.41, Worcs BAP | 2 |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | May 2005 | BC2, NERC s.41, Worcs BAP | 2 |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | June 2005 | BC2, NERC s.41, Worcs BAP | |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | July 2005 | BC2, NERC s.41, Worcs BAP | |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | Aug 2005 | BC2, NERC s.41, Worcs BAP | 3 |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | Dec 2005 | BC2, NERC s.41, Worcs BAP | |
| *Emberiza schoeniclus* | Reed Bunting | [redacted] | Ipsley Alders Marsh | 17/01/2006 | BC2, NERC s.41, Worcs BAP | |
| *Erinaceus europaeus* | Hedgehog | [redacted] | Warwick Highway | 04/05/2001 | BC3 WCA6, NERC s.41 | dead on road |
| *Erinaceus europaeus* | Hedgehog | [redacted] | Ipsley | 20/06/2001 | BC3 WCA6, NERC s.41 | dead on road |
| *Erinaceus europaeus* | Hedgehog | [redacted] | Warwick Highway | 09/09/2004 | BC3 WCA6, NERC s.41 | dead on road |
| *Erinaceus europaeus* | Hedgehog | [redacted] | Ipsley Alders | 30/09/2007 | BC3 WCA6, NERC s.41 | dead on Furze Lane |
| *Meles meles* | Badger | [redacted] | Warwick Highway | 07/08/2001 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Gorcott Hill | 01/02/2002 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Ullenhall Lane Oldberrow | 13/02/2003 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Beoley North | 03/06/2003 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | A4023 | 16/04/2007 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | A4023 | 16/04/2007 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Beoley / Church Hill | 23/02/2009 | BC3 PBA WCA6 | Badgers seen here before but not recorded. |
| *Mustela putorius* | Polecat | [redacted] | Bransons Cross | 08/03/1994 | BC3 ECH5 WCA6, NERC s.41 | |
| *Myotis* | Unidentified Bat | [redacted] | St. Leonard's Church, Beoley | 27/07/1992 | BC2 BoC2 ECH4 WCA5,6 | Bats flying round house, droppings in roof space. Possibly Whiskered bats. |
| *Myotis daubentoni* | Daubenton's Bat | [redacted] | 12 Wolverton Close, Ipsley | 09/06/2006 | BC2 BoC2 ECH4 WCA5,6 | Dung or other signs |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | 01/08/2004 | NERC s.41 | wood |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | Feb 2005 | NERC s.41 | 10 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | Mar 2005 | NERC s.41 | 7 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | April 2005 | NERC s.41 | 8 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | May 2005 | NERC s.41 | 8 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | June 2005 | NERC s.41 | 6 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | July 2005 | NERC s.41 | 20+ |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | Aug 2005 | NERC s.41 | 5 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | Sept 2005 | NERC s.41 | 5 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | Oct 2005 | NERC s.41 | 22 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | Nov 2005 | NERC s.41 | 5 |
| *Passer domesticus* | House Sparrow | [redacted] | Ipsley Alders Marsh | Dec 2005 | NERC s.41 | 7 |
| *Pipistrellus* | Pipistrellus | [redacted] | St. Leonard's Church, Beoley | 27/07/1992 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | Bats seen flying round house and possible droppings in roof space. |
| *Pipistrellus* | Pipistrellus | [redacted] | Cheswick Close, Winyates Green | 21/02/2006 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | Bats in cavity wall and roof space, droppings present |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | Fairford Close, Church Hill, Redditch | 22/07/2003 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | Droppings and mummified bat under coping tiles. |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | Ipsley Alders Marsh | 25/05/2005 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | Ipsley Middle School, Winyates | 24/05/2006 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | ID from captured bat. In cavity wall between computer & server rooms. |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | 12 Wolverton Close, Ipsley | 09/06/2006 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | roosting |
| *Pipistrellus pipistrellus 45kHz* | 45 Khz Pipistrelle | [redacted] | Moon's Moat | 2001 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | |
| *Plecotus auritus* | Brown Long-Eared Bat | [redacted] | St. Leonard's Church, Beoley | 27/07/1992 | BC2 BoC2 ECH4 WCA5,6, NERC s.41 | Droppings under beams & bats observed on rafters. |
| *Plecotus auritus* | Brown Long-Eared Bat | [redacted] | Brookside, Holt End, Redditch | 11/02/2005 | BC2 BoC2 ECH4 WCA5,6, NERC s.41 | ID uncertain. Droppings at back of chimney stack & a bat flew when tile was lifted |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | Jan 2005 | BC2, NERC s.41 | |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | Feb 2005 | BC2, NERC s.41 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | Mar 2005 | BC2, NERC s.41 | 2 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | April 2005 | BC2, NERC s.41 | 4 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | May 2005 | BC2, NERC s.41 | 4 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | June 2005 | BC2, NERC s.41 | 3 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | July 2005 | BC2, NERC s.41 | 3 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | Sept 2005 | BC2, NERC s.41 | 2 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | Oct 2005 | BC2, NERC s.41 | 3 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | Nov 2005 | BC2, NERC s.41 | 2 |
| *Prunella modularis* | Dunnock | [redacted] | Ipsley Alders Marsh | Dec 2005 | BC2, NERC s.41 | 3 |
| *Pyrrhula pyrrhula* | Bullfinch | [redacted] | Ipsley Alders Marsh | April 2005 | NERC s.41 | |
| *Pyrrhula pyrrhula* | Bullfinch | [redacted] | Ipsley Alders Marsh | May 2005 | NERC s.41 | |
| *Pyrrhula pyrrhula* | Bullfinch | [redacted] | Ipsley Alders Marsh | June 2005 | NERC s.41 | |
| *Pyrrhula pyrrhula* | Bullfinch | [redacted] | Ipsley Alders Marsh | July 2005 | NERC s.41 | 6 |
| *Pyrrhula pyrrhula* | Bullfinch | [redacted] | Ipsley Alders Marsh | Aug 2005 | NERC s.41 | 2 |
| *Pyrrhula pyrrhula* | Bullfinch | [redacted] | Ipsley Alders Marsh | Sept 2005 | NERC s.41 | 2 |
| *Pyrrhula pyrrhula* | Bullfinch | [redacted] | Ipsley Alders Marsh | Oct 2005 | NERC s.41 | 2 |
| *Semiothisa clathrata* | Latticed Heath | [redacted] | Ipsley Alders Marsh | 06/07/1997 | NERC s.41 | |
| *Sturnus vulgaris* | Starling | [redacted] | Moon's Moat | 01/06/2001 | NERC s.41 | |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | Feb 2005 | NERC s.41 | 20 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | Mar 2005 | NERC s.41 | 9 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | April 2005 | NERC s.41 | 19 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | May 2005 | NERC s.41 | 9 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | July 2005 | NERC s.41 | 2 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | Sept 2005 | NERC s.41 | 3 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | Oct 2005 | NERC s.41 | 13 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | Nov 2005 | NERC s.41 | 25 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | Dec 2005 | NERC s.41 | 6 |
| *Sturnus vulgaris* | Starling | [redacted] | Ipsley Alders Marsh | 17/01/2006 | NERC s.41 | |
| *Triturus cristatus* | Great Crested Newt | [redacted] | Arrow Valley Park, Pond 78 | 25/04/1998 | BC2 ECH2,4 WCA5, NERC s.41, Worcs BAP | 122 egg/ovum |
| *Triturus cristatus* | Great Crested | [redacted] | Arrow Valley Park, | 26/04/1998 | BC2 ECH2,4 WCA5, NERC | 2 Adults |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Newt | | Pond 78 | | s.41, Worcs BAP | |
| *Triturus cristatus* | Great Crested Newt | [redacted] | Arrow Valley Park, Pond 78 | 26/04/1998 | BC2 ECH2,4 WCA5, NERC s.41, Worcs BAP | 17 Adults |
| *Triturus cristatus* | Great Crested Newt | [redacted] | Winyates, Pond 39 | 31/05/1999 | BC2 ECH2,4 WCA5, NERC s.41, Worcs BAP | 22 egg/ovum |
| *Turdus philomelos* | Song Thrush | [redacted] | Moon's Moat | 01/06/2001 | NERC s.41 | |
| *Turdus philomelos* | Song Thrush | [redacted] | Ipsley Alders Marsh | April 2005 | NERC s.41 | 2 |
| *Turdus philomelos* | Song Thrush | [redacted] | Ipsley Alders Marsh | May 2005 | NERC s.41 | 2 |
| *Turdus philomelos* | Song Thrush | [redacted] | Ipsley Alders Marsh | June 2005 | NERC s.41 | |
| *Turdus philomelos* | Song Thrush | [redacted] | Ipsley Alders Marsh | July 2005 | NERC s.41 | |
| *Turdus philomelos* | Song Thrush | [redacted] | Ipsley Alders Marsh | Oct 2005 | NERC s.41 | |
| *Turdus philomelos* | Song Thrush | [redacted] | Ipsley Alders Marsh | Nov 2005 | NERC s.41 | |

*Worcestershire Biological Records Centre*

# Designated Sites Information/ Statutory and Non-Statutory Sites Information

Statutory and Non-Statutory sites information held by WBRC as at 20/04/10 for 2km radius around Central Grid Ref SP084682 (Ref: 2010/050).

**Special Wildlife Sites - objects, which are wholly or partially within 2km of site.**

| Site No. | Site Name | Grid Ref |
|---|---|---|
| SP 06/30 | Ravensbank Drive Bridle Track | SP079684 |
| SP 06/31 | Ipsley Alders Marsh | SP077676 |
| SP 06/32 | Pinkgreen Wood | SP084698 |
| SP 06/33 | Holt End Meadows | SP074697 |
| SP 07/21 | Carpenter's Hill Wood and Prior Fields Complex | SP081703 |

**Grassland Inventory Sites - objects, which are wholly or partially within 2km of site.**

| Site No. | Site Name | Grid Ref | NVC type | NVC Area | Mgmt |
|---|---|---|---|---|---|
| 9 35 | Ipsley Alders | SP078678 | | | |
| 9 36 | Ipsley Alders | SP078675 | | | |
| 9 9 | Ipsley Alders | SP080677 | | | |
| 10 10 | Gorcott Meadow | SP082681 | | | |
| 23 58 | Boxfoldia Meadow | SP071682 | MG4 | 0.5 | neg |
| 33 41 | Banks Green Meadows | SP076700 | MG5A | 1.6 | hor |
| 33 43 | Banks Green Meadows | SP077700 | MG5A | 0.8 | hor |

| | | | | | |
|---|---|---|---|---|---|
| 17 26 | Moss Lane pasture | SP081695 | | | |
| 10 10 | Woodlands Meadow | SP082701 | MG5 | 0.7 | mow |

## SSSI - objects, which are wholly or partially within 2km of site.

| SSSI Name | SSSI Easting | SSSI Northing |
|---|---|---|
| Ipsley Alders Marsh | 407899.63 | 267637.97 |

## WWT Reserves - objects, which are wholly or partially within 2km of site.

| Reserve No. | Site Name | Grid Ref |
|---|---|---|
| 53 | Ipsley Alders | SP078676 |

**SITE No: SP06/30**

| *SITE NAME* | **RAVENSBANK DRIVE BRIDLE TRACK** |
|---|---|
| **NATIONAL GRID REFERENCE** | SP079 684 |
| **LINEAR SITE LIMITS** (if appropriate) | SP074 694 (north), SP085 675 (south) |
| **DATE OF LISTING** | 28.09.1990 |
| | |
| **DISTRICT COUNCIL** (s) | Bromsgrove, Redditch |
| **PARISH** | Beoley, Redditch |
| | |
| **TOTAL AREA** | N/A |
| **LENGTH IF LINEAR** | 2.1km |
| | |
| **SWS HABITAT** | Hedgerow, Woodland |
| **NATIONAL BAP HABITATS** | N/A |
| **OTHER HABITATS OF IMPORTANCE** | Open water - flowing, scrub, Grassland |
| **NATIONAL BAP SPECIES** | [Bats, great-crested newts] |
| **OTHER SPECIES OF IMPORTANCE** | Dog's Mercury, Enchanter's Nightshade, Knapweed |
| | |

GENERAL DESCRIPTION

A long double hedged trackway that has become overgrown and now provides an important wooded wildlife corridor around the north-eastern edge of Redditch. The site also forms part of the county boundary.

The site comprises two hedges (one either side of the track) with associated scrub and areas of more mature linear woodland, a small watercourse augmented by numerous wet flushes and seasonally inundated marginal ditches, and more permanent water features, including in particular a large pond at its northern end. The central trackway is effectively a woodland ride and is heavily shaded and damp, with a ground flora including pendulous sedge and soft rush. Remnant patches of grassland associated with previous land uses are now mostly shaded out but grassland species persist in a few areas on the western edge of the site and help to add to the overall floristic diversity. Whilst the habitats found here are not particularly rare their value is considerably enhanced by their linear nature and the site is likely to provide a foraging and commuting corridor for a range of protected and other species including bats and great-crested newts. Although broken in several places the site extends to over 2km and its primary value is as a wildlife corridor through an otherwise rather urban environment.

Flora includes ash, oak, field maple, hawthorn, hazel, elder, holly, enchanter's nightshade, bluebell, meadowsweet, soft rush, pendulous sedge, bird's-foot trefoil and black knapweed.

Faunal records for the site are incomplete but it is highly likely that the corridor is used by bats and great-crested newts, both of which are known to occur in the locality. It is also of value for nesting birds including the amber-listed Song Thrush.

## Ravensbank Drive Bridle Track

Do not scale from map. For accurate plan refer to GIS.

Scale 1:10000

## Appendix 5 – Wildlife legislation

### Badgers

Under the ***Protection of Badgers Act 1992*** and the ***Wildlife Order (Northern Ireland) 1985***, it is illegal to:

• wilfully kill, injure, take, possess or cruelly treat a badger or attempt to do so
• intentionally or recklessly damage, destroy or obstruct access to a badger sett whether or not it is occupied at the time
• disturb a badger while it is occupying a sett
• sell, keep or mark a healthy badger or possess any dead badger or part thereof.

### Bats

Under the ***Wildlife and Countryside Act 1981***, the ***Wildlife Order (NI) 1985*** and the Conservation of Habitats and Species regulations 2010 it is illegal to:

• intentionally or deliberately kill, injure or capture bats
• intentionally, deliberately or recklessly* disturb bats
• intentionally, deliberately or recklessly* damage, destroy or obstruct any place used for shelter or protection, i.e. bat roosts (even if they are not currently occupied)
• possess, sell or transport a bat, or anything derived from it.

### Dormice

Under the ***Wildlife and Countryside Act 1981***, the ***Wildlife Order (NI) 1985*** and the Conservation of Habitats and Species regulations 2010 it is illegal to:

• intentionally or deliberately kill, injure or capture dormice
• intentionally, deliberately or recklessly* disturb dormice
• intentionally, deliberately or recklessly* damage, destroy or obstruct breeding or resting sites or places used for shelter or protection (whether occupied or not)
• possess or transport a dormouse (or any part thereof) unless under licence
• sell or exchange dormice.

### Otters

Otters and their habitat are **fully protected** under the ***Wildlife and Countryside Act 1981 (as amended)***, the ***Wildlife Order (NI) 1985*** and the Conservation of Habitats and Species regulations 2010 it is illegal to:

• intentionally or deliberately kill, injure or capture otters
• intentionally or recklessly* disturb otters
• intentionally or recklessly* damage, destroy or obstruct breeding or resting sites or places used for shelter or protection whether occupied or not
• possess or transport an otter or any part thereof unless under licence
• sell or exchange otters.

### Water Vole

Water voles are protected under the ***Wildlife and Countryside Act 1981 (Amendment 1998)***, making it illegal to:

• intentionally or recklessly* disturb, destroy or obstruct access to any place that water voles use for shelter or protection whether occupied or not
• intentionally or recklessly* damage water voles while they are in a place of shelter or protection.

Under the current legislation, water voles themselves are therefore only protected when occupying places of shelter or protection (burrows etc).

**Birds**
All wild birds (i.e. resident, visiting and introduced species) in the UK are protected by law under the ***Wildlife and Countryside (WCA) Act 1981 (as amended)***, the ***Wildlife Order (NI) 1985,*** and the ***Wildlife and Countryside Amendment (Scotland) Regulations 2001***, making it illegal to:
• kill, injure or take any wild bird
• take, damage or destroy the nest of any wild bird while it is being built or in use
• take or destroy the eggs of any wild bird
• possess or control (e.g. for exhibition or sale) any wild bird or egg unless obtained legally.

***Birds that receive special protection***
Species listed in ***Schedule 1*** of the ***WCA 1981*** and the ***Wildlife Order (NI) 1985,*** such as the barn owl and peregrine falcon, receive special protection. In addition to the above legislation, it is also illegal to intentionally or recklessly* disturb any bird listed on ***Schedule 1*** while it is nest building, or at or near a nest containing eggs or young, or to disturb any of its dependent young. Disturbance could occur, for example, through noise caused by construction works in close proximity to the nest.

**White-clawed crayfish**
Under the ***Wildlife and Countryside Act 1981 (as amended)*** it is illegal to intentionally take, sell, barter or exchange white-clawed crayfish.

**Great crested newt**
Great crested newts and their habitat are **fully protected** under the ***Wildlife and Countryside Act 1981 (as amended)***, and the Conservation of Habitats and Species regulations 2010 it is illegal to
• intentionally or deliberately capture, kill or injure great crested newts
• intentionally, deliberately or recklessly* damage, destroy or obstruct access to any place used for shelter or protection, including resting or breeding places (occupied or not)
• deliberately, intentionally or recklessly* disturb great crested newts when in a place of shelter
• sell, barter, exchange or transport or offer for sale great crested newts or parts of them. The legislation covers all life stages: eggs, larvae, juveniles and adults.

**Common Amphibians**
In England, Scotland and Wales the common frog, common toad, smooth newt and palmate newt are all protected against sale, trade, etc under the ***Wildlife and Countryside Act 1981.***

**Widespread reptiles**
All native British reptiles are protected against intentional killing and injury under the ***Wildlife and Countryside Act 1981 (as amended)*** and the ***Wildlife Order (NI) 1985***. In England, Scotland and Wales**,** slow-worm, common lizard, adder and grass snake are also protected against sale, barter or exchange but their habitats and/or places of shelter are not specifically protected.
**Invertebrates**
Certain invertebrate species are covered by the Wildlife ***and Countryside Act (WCA) 1981*** (***as amended***) and the ***Wildlife Order (NI) 1985*** (***as amended***) and given full protection

against killing and injury, damage and/or destruction of their place of shelter, or taking. Other species are protected against sale only. For those species receiving *full protection*, it is illegal to:

• intentionally kill, injure or capture
• intentionally or recklessly* disturb
• intentionally or recklessly* damage, destroy or obstruct places of shelter or protection, including breeding sites (occupied or not)
• possess or transport an animal (or any part thereof) unless under licence
• sell or exchange animals.

**Plants**

Plants are protected by law. The ***Wildlife and Countryside Act 1981 (as amended)*** and the ***Wildlife Order (NI) 1985*** make it an offence for any person who is not authorised to intentionally uproot any wild plant. An "authorised" person can be the owner or occupier of the land on which the action is taken, or anybody authorised by them; or any person authorised in writing by the local authority for the area within which the action is taken. In addition, the ***Wildlife and Countryside Act 1981 (as amended)*** also includes within ***Schedule 8*** in the order of 60 plant species that it is illegal for any person to intentionally pick, uproot or destroy. It also makes it an offence to offer wild bluebell (*Hyacinthoides non-scripta*) bulbs for sale.

**The term "recklessly" was added as an amendment to the** *Wildlife and Countryside Act 1981* **as a result of the** *Countryside & Rights of Way Act 2000* – **this applies to England and Wales only**.

# Appendix 6 – Species lists

### Higher plants

| Scientific name | Common name | 2 indicates also present in SWS |
|---|---|---|
| *Acer campestre* | Field Maple | 2 |
| *Acer platanoides* | Norway Maple | 1 |
| *Acer pseudoplatanus* | Sycamore | 1 |
| *Achillea millefolium* | Yarrow | 1 |
| *Agrostis capillaris* | Common Bent | 1 |
| *Agrostis stolonifera* | Creeping Bent | 1 |
| *Alliaria petiolata* | Garlic Mustard | 2 |
| *Alopecurus pratensis* | Meadow Foxtail | 1 |
| *Angelica sylvestris* | Wild Angelica | 2 |
| *Anthoxanthum odoratum* | Sweet Vernal-grass | 1 |
| *Anthriscus sylvestris* | Cow Parsley | 2 |
| *Apium nodiflorum* | Fool`s Water-cress | 1 |
| *Arrhenatherum elatius* | False Oat-grass | 2 |
| *Arum maculatum* | Cuckoo Pint | 2 |
| *Athyrium filix-femina* | Lady Fern | 2 |
| *Bellis perennis* | Daisy | 1 |
| *Betula pendula* | Silver Birch | 1 |
| *Bromopsis ramosa* | Hairy-brome | 1 |
| *Calystegia sepium* | Hedge Bindweed | 1 |
| *Cardamine flexuosa* | Wavy Bitter-cress | 1 |
| *Cardamine hirsuta* | Hairy Bitter-cress | 1 |
| *Cardamine pratensis* | Cuckooflower | 1 |
| *Carex hirta* | Hairy Sedge | 1 |
| *Carex pendula* | Pendulous Sedge | 2 |
| *Carex remota* | Remote Sedge | 2 |
| *Carex sylvatica* | Wood Sedge | 2 |
| *Centaurea nigra* | Common Knapweed | 1 |
| *Cerastium fontanum* | Common Mouse-ear | 1 |
| *Cerastium glomeratum* | Sticky Mouse-ear | 1 |
| *Chaerophyllum temulum* | Rough Chervil | 2 |
| *Chamerion angustifolium* | Rosebay Willowherb | 2 |
| *Cirsium arvense* | Creeping Thistle | 1 |
| *Cirsium vulgare* | Spear Thistle | 1 |
| *Conopodium majus* | Pignut | 1 |
| *Convolvulus arvensis* | Field Bindweed | 2 |
| *Corylus avellana* | Hazel | 2 |
| *Crataegus laevigata* | Midland Hawthorn | 1 |
| *Crataegus monogyna* | Hawthorn | 2 |
| *Cynosurus cristatus* | Crested Dog`s Tail | 1 |
| *Dactylis glomerata* | Cock`s Foot | 2 |
| *Deschampsia cespitosa* | Tufted Hair Grass | 2 |
| *Dryopteris affinis* | Scaly Male Fern | 2 |

| | | |
|---|---|---|
| *Dryopteris dilatata* | Broad Buckler-fern | 2 |
| *Dryopteris filix-mas* | Male Fern | 2 |
| *Elytrigia repens* | Common Couch | 1 |
| *Epilobium hirsutum* | Great Willowherb | 1 |
| *Festuca gigantea* | Giant Fescue | 1 |
| *Festuca rubra* | Red Fescue | 1 |
| *Filipendula ulmaria* | Meadowsweet | 2 |
| *Fragaria vesca* | Wild Strawberry | 2 |
| *Frangula alnus* | Alder Buckthorn | 2 |
| *Fraxinus excelsior* | Ash | 2 |
| *Galium aparine* | Cleavers | 2 |
| *Geranium dissectum* | Cut-leaved Cranesbill | 1 |
| *Geranium lucidum* | Shining Crane's-bill | 2 |
| *Geranium molle* | Dove's-foot Crane's-bill | 1 |
| *Geranium robertianum* | Herb Robert | 2 |
| *Geum urbanum* | Herb Bennet | 2 |
| *Glechoma hederacea* | Ground Ivy | 2 |
| *Glyceria fluitans* | Floating Sweet-grass | 1 |
| *Hedera helix* | Ivy | 2 |
| *Heracleum sphondylium* | Hogweed | 2 |
| *Holcus lanatus* | Yorkshire Fog | 2 |
| *Holcus mollis* | Creeping Soft-grass | 2 |
| *Hyacinthoides non-scripta* | Bluebell | 2 |
| *Hypericum tetrapterum* | Square-stalked St.John`s-wort | 1 |
| *Ilex aquifolium* | Holly | 2 |
| *Juncus filiformis* | Thread Rush | 1 |
| *Juncus inflexus* | Hard Rush | 1 |
| *Lamiastrum galeobdolon* | Yellow Archangel | 1 |
| *Lamiastrum galeobdolon subsp.argentatum* | Yellow Archangel | 2 |
| *Lamium album* | White Dead Nettle | 1 |
| *Lamium purpureum* | Red Dead-nettle | 1 |
| *Lapsana communis* | Nipplewort | 2 |
| *Lathyrus pratensis* | Meadow Vetchling | 1 |
| *Leucanthemum vulgare* | Oxeye Daisy | 1 |
| *Lolium perenne* | Perennial Ryegrass | 1 |
| *Lonicera periclymenum* | Honeysuckle | 2 |
| *Lonicera* sp | Honeysuckle | 1 |
| *Lotus corniculatus* | Bird`s-foot-trefoil | 1 |
| *Lotus pedunculatus* | Greater Bird`s-foot-trefoil | 1 |
| *Luzula campestris* | Field Wood-rush | 1 |
| *Malus sylvestris* | Crab Apple | 1 |
| *Medicago lupulina* | Black Medick | 1 |
| *Melica uniflora* | Wood Melick | 2 |
| *Melilotus altissimus* | Tall Melilot | 1 |
| *Mercurialis perennis* | Dog's Mercury | 2 |

| | | |
|---|---|---|
| *Myosotis sylvatica* | Wood Forget-me-not | 2 |
| *Narcissus* sp | Daffodil | 1 |
| *Ophioglossum vulgatum* | Adder's-tongue | 1 |
| *Persicaria amphibia* | Amphibious Bistort | 1 |
| *Phleum pratense* | Timothy Grass | 1 |
| *Phyllitis scolopendrium* | Hart`s Tongue Fern | 2 |
| *Plantago lanceolata* | Ribwort Plantain | 1 |
| *Plantago major* | Greater Plantain | 1 |
| *Poa annua* | Annual Meadow-grass | 1 |
| *Poa pratensis* | Smooth Meadow-grass | 1 |
| *Poa trivialis* | Rough Meadow-grass | 2 |
| *Polypodium vulgare* | Common Polypody | 2 |
| *Polystichum setiferum* | Soft Shield Fern | 2 |
| *Populus x canescens (P. alba x tremula)* | Grey Poplar | 1 |
| *Potentilla anserina* | Silverweed | 1 |
| *Potentilla erecta* | Tormentil | 1 |
| *Potentilla reptans* | Creeping Cinquefoil | 1 |
| *Primula veris* | Cowslip | 1 |
| *Prunella vulgaris* | Selfheal | 1 |
| *Prunus avium* | Wild Cherry | 2 |
| *Prunus laurocerasus* | Cherry Laurel | 2 |
| *Prunus spinosa* | Blackthorn | 2 |
| *Quercus robur* | Pedunculate Oak | 2 |
| *Ranunculus acris* | Meadow Buttercup | 1 |
| *Ranunculus bulbosus* | Bulbous Buttercup | 1 |
| *Ranunculus ficaria* | Lesser Celandine | 2 |
| *Ranunculus repens* | Creeping Buttercup | 2 |
| *Ribes rubrum* | Red Currant | 2 |
| *Rorippa nasturtium-aquaticum* | Watercress | 1 |
| *Rosa arvensis* | Field Rose | 2 |
| *Rosa canina* | Dog Rose | 2 |
| *Rubus fruticosus* | Bramble | 2 |
| *Rumex acetosa* | Common Sorrel | 1 |
| *Rumex crispus* | Curly Dock | 1 |
| *Rumex obtusifolius* | Broad-leaved Dock | 2 |
| *Rumex sanguineus* | Wood Dock | 2 |
| *Salix cinerea* | Grey Willow | 1 |
| *Salix fragilis* | Crack Willow | 2 |
| *Sambucus nigra* | Elder | 2 |
| *Sanguisorba officinalis* | Great Burnet | 1 |
| *Scrophularia auriculata* | Water Figwort | 2 |
| *Scrophularia nodosa* | Common Figwort | 2 |
| *Senecio jacobaea* | Ragwort | 2 |
| *Senecio vulgaris* | Groundsel | 1 |
| *Silene dioica* | Red Campion | 2 |
| *Sison amomum* | Stone Parsley | 2 |

| | | |
|---|---|---|
| *Sisymbrium officinale* | Hedge Mustard | 2 |
| *Solanum dulcamara* | Bittersweet | 2 |
| *Stachys sylvatica* | Hedge Woundwort | 2 |
| *Stellaria graminea* | Lesser Stitchwort | 1 |
| *Stellaria holostea* | Greater Stitchwort | 2 |
| *Stellaria media* | Common Chickweed | 1 |
| *Stellaria uliginosa* | Bog Stitchwort | 1 |
| *Symphytum officinale* | Common Comfrey | 2 |
| *Tamus communis* | Black Bryony | 2 |
| *Taraxacum* spp | Dandelion | 2 |
| *Taxus baccata* | Yew | 1 |
| *Trifolium dubium* | Lesser Trefoil | 1 |
| *Trifolium pratense* | Red Clover | 1 |
| *Trifolium repens* | White Clover | 1 |
| *Ulmus glabra* | Wych Elm | 1 |
| *Ulmus procera* | English Elm | 2 |
| *Urtica dioica* | Common Nettle | 2 |
| *Veronica beccabunga* | Brooklime | 1 |
| *Veronica chamaedrys* | Germander Speedwell | 2 |
| *Veronica hederifolia* | Ivy-leaved Speedwell | 2 |
| *Veronica serpyllifolia* | Thyme-leaved Speedwell | 1 |
| *Viburnum opulus* | Guelder Rose | 1 |
| *Vicia cracca* | Tufted Vetch | 1 |
| *Vicia sativa* | Common Vetch | 1 |
| *Vinca major* | Greater Periwinkle | 2 |
| *Viola odorata* | Sweet Violet | 1 |
| *Viola reichenbachiana* | Early Dog-violet | 1 |

## Mosses

| **Scientific name** |
|---|
| *Atrichum undulatum* |
| *Brachythecium albicans* |
| *Brachythecium rutabulum* |
| *Calliergon cuspidatum* |

## Birds

| **Scientific name** | **Common name** |
|---|---|
| *Turdus merula* | Blackbird |
| *Parus caeruleus* | Blue Tit |
| *Corvus corone corone* | Carrion Crow |
| *Fringilla coelebs* | Chaffinch |
| *Chaetura pelagica* | Chimney Swift |
| *Carduelis carduelis* | Goldfinch |
| *Parus major* | Great Tit |

| | |
|---|---|
| *Chlamydotis undulata* | Greenfinch |
| *Passer domesticus* | House Sparrow |
| *Erithacus rubecula* | Robin |
| *Corvus frugilegus* | Rook |
| *Turdus philomelos* | Song Thrush |
| *Sylvia communis* | Whitethroat |
| *Columba palumbus* | Wood Pigeon |
| *Troglodytes troglodytes* | Wren |

## Invertebrates

| **Scientific name** | **Common name** |
|---|---|
| *Anthocharis cardamines* | Orange Tip |
| *Inachis io* | Peacock |
| *Aglais urticae* | Small Tortoiseshell |
| *Pararge aegeria* | Speckled Wood |

**Mammals**

| **Scientific name** | **Common name** |
|---|---|
| *Vulpes vulpes* | Fox |

# WINYATES GREEN
# TRIANGLE
# REDDITCH
# WORCESTERSHIRE

**Protected Species Survey**

**FINAL**
**report to**
**Redditch Borough Council**

**Project Ref: 2010/050**

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**January 2011**

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## SUMMARY

In April 2010, Worcestershire Wildlife Consultancy (WWC) was commissioned by Redditch Borough Council (RBC) to undertake surveys for a variety of protected species (bats, water voles, badgers and great crested newts) on an area of land known as Winyates Green Triangle in the Stratford-on-Avon District, adjacent to Redditch. Please note that this survey report compliments and should be read in conjunction the with earlier Phase 1 Habitat Survey & Protected Species Survey Assessment produced by WCC in May 2010 on behalf of RBC for the Winyates Green Triangle site.

Transects undertaken across the site for bats highlighted relatively low levels of activity. Species present on site were predominantly common pipistrelle, in addition soprano pipistrelle, noctule and *myotis* sp. were also detected. However the level of activity for all species was low, even along the diverse hedgerows and around the ditches and ponds. Due to the low levels of activity across the site, there would appear to be **no obvious and immediate implications** for any future proposed developments. However, it should be noted that the existing hedges do provide some level of connectivity across the site and to the wider countryside. It is therefore recommended that the design of any development takes into account the need for connectivity and includes linear features such as hedgerows which offer foraging and commuting routes for bats within the area. These routes should ideally be 'dark' with only very low levels of light along their length.

All large mature trees on the site as a whole should be retained as they have the potential to develop features which could be used by bats as future roosting areas.

A water vole survey was undertaken on the same area of land following the survey guidelines outlined within the *Water Vole Conservation Handbook* (Strachan and Moorhouse, 2006). No signs of water vole were found on the site and therefore **no further action is required**.

Surveys for badger activity revealed that badgers did not appear to be using the site, in particular no evidence of badger were found around the hole previously identified as potential for badger activity by the Phase I survey. **No immediate action is required at this time,** although it is recommended that further surveys are carried out well in advance of any development taking place.

Great crested newts were found at pond 2. Therefore **there may be implications under the Wildlife and Countryside Act 1981(as amended)** and the Conservation of Habitats and Species Regulations 2010. Further to any development taking place it will be necessary to undertake **a dedicated great crested newt population survey**. This would entail six visits to the site using a variety of methods including torching, netting, egg searching and bottle trapping, undertaken between mid-March to mid/late-June with a minimum of two visits during mid-April to mid-May in any given year. In addition, it will be necessary to apply for a European Protected Species Licence before any development takes place within 500m radius of the pond.

**It should be noted that if more than twelve months elapse between this survey and the commencement of any development then further surveys should be undertaken at an appropriate time to determine the status of any protected species which may have taken up residence during the intervening period.**

# 1. INTRODUCTION

## 1.1 Commissioning Brief

In April 2010, Worcestershire Wildlife Consultancy (WWC) was commissioned by Redditch Borough Council (RBC) to undertake a series of protected species surveys focusing on bats, water voles (*Arvicola terrestris*), badgers (*Meles meles*) and great crested newts (*Triturus cristatus*) on an area of land known as Winyates Green Triangle on the outskirts of Redditch, on the border of Worcestershire and Warwickshire. The survey was to ensure compliance with national and European legislation. Please note that this survey report compliments and should be read in conjunction the with earlier Phase 1 Habitat Survey & Protected Species Survey Assessment produced by WCC in May 2010 on behalf of RBC for the Winyates Green Triangle site.

## 1.2 Summary Of The Proposed Development

The site has been identified as a potential site for development. No development plans were submitted to supplement this report.

## 1.3 Site Location

Winyates Green Triangle is located on the eastern outskirts of Redditch, Worcestershire, and for the most part falls within the county of Warwickshire (NGR SP086678). The survey area is located between residential housing and the A4023 and A435 main roads.

## 1.4 Scope Of The Survey

The survey focussed on the following points:

- To determine whether the site supports any protected species (in this case bats, water voles, badgers and great crested newts) of which account must be taken prior to and during any planned works in accordance with the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 and the Badgers Act 1992.

Furthermore, the survey recommendations are guided by the following policies:

- With regard to Planning Policy Statement 9 (PPS9), it is now a requirement for local planning authorities to maintain and enhance, restore or add to biodiversity. As stated within Paragraph 14 of the document, “Development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design. When considering proposals, local planning authorities should maximise such opportunities in and around developments, using planning obligations where appropriate”.
- The site surveys focussed on establishing the actual presence of species (in this case bats, water voles, badgers and great crested newts) which are considered to be of **principal importance** for the conservation of biodiversity with reference to Planning Policy Statement 9: Biodiversity & Geological Conservation (ODPM, 2005), especially those given protection under British or European wildlife legislation as stated above.
- The Natural Environment & Rural Communities Act (NERC), 2006 states. “Every public authority must, in exercising its functions, have regard, so far is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”.

## 1.5. Biological Records

A search of biological records kept by Worcestershire Biological Records Centre was commissioned to ascertain presence and distribution of protected species, non-statutory and statutory sites within a 2km radius of the site.

## 1.6. Survey Constraints

The comprehensiveness of any ecological survey may be limited by the season in which the site visits were undertaken. To confirm the presence or absence of all protected species usually requires multiple visits at suitable times of the year.

This report cannot therefore be considered to provide a comprehensive analysis of the protected species on the site. However, it does provide a "snapshot" of the status of specific protected species present on the day/s of the visit and highlight areas that require further action before any future developments can take place.

*Bats*

Except in the simplest cases, it is extremely difficult to survey trees and be certain that any bat roosts have been detected. Tree cavities (which includes under bark or in splits or cracks) are used throughout the year by a variety of species, many of which are known to move unpredictably between roosts. Again only a small number of visits were undertaken and no visits were undertaken during the early summer months. In addition no assessment of the interior of any of the hollow trees was undertaken due to access and health and safety constraints.

*Water voles*

Several sections of the streams surveyed were difficult to access due to growth of dense vegetation covering the stream. In addition, pond 1 was totally inaccessible due to heavy bramble coverage. However, it should be noted that in general the site appeared to have low suitability for water voles.

*Badgers*

No survey constraints were experienced while undertaking walkover surveys for badgers. However, it should be noted that only a single survey assessment visit was undertaken and badgers are often very dynamic in their sociality and changes to site use may occur at any time.

*Great Crested Newts*

No physical survey constraints were experienced while undertaking great crested newt surveys. However, it should be noted that surveys were undertaken after a dry spring and summer (nationally reported as being the driest in approximately 80 years) and it may be that during wetter years pond 1 may hold standing water and form a pond.

## 2. Bats

### 2.1 Background Information

Bats often occupy different roost sites at varying times of the year; what is suitable as a summer roost may not be as suitable for hibernation due to the variation in temperatures, for instance. Females often occupy maternity roosts when giving birth and return to the communal roost when the young are partly grown. Individual bats may move their roost site dependent on weather conditions. Since bats tend to re-use the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time.

There has been a severe decline in bat numbers over recent years, the main factors currently causing loss or decline are probably related to the following:

- Intensification of agriculture and inappropriate riparian management.
- Widespread misunderstanding of, or possibly ignored, legislation protecting bats, leading to loss or damage of many roosts when consultation procedures have not been carried out.
- Loss, destruction and disturbance of other roosts, particularly maternity roosts, through the use of toxic timber treatment chemicals, intolerance by roost owners, inappropriate building practices and tree felling.
- Loss of winter roosting sites, which need to be cold, humid and undisturbed. Such sites may include buildings, hollow trees and underground sites (mines, old tunnels, icehouses and cellars).
- Losses, or changes to, large country properties which can supply both summer and winter roosts that are generally surrounded by potentially good foraging habitat.

### 2.2 Legislation

All bat species are protected by law, both national (Schedule 2 of the Conservation (Natural Habitats &c.) the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981, schedule 5) and international (The Bern Convention 1979, The EC Habitats Directive 1992, and The Bonn Convention 1980 including the Agreement on the Conservation of Bats in Europe, 1994). The Countryside and Rights of Way Act 2000 reinforces the Habitat Regulations by creating a criminal offence rather than a prohibited action (Schedule 12).

There are three main areas of protection:

- It is illegal to intentionally kill or injure a bat.
- It is illegal to disturb a bat roost. This covers all roost sites such as caves, trees and buildings.
- It is illegal to damage a roost site or obstruct the entrance.

Where developments requiring planning permission may affect protected species, such as bats, it is essential that appropriate surveys are conducted and submitted to meet the requirements of Planning Policy Statement 9: Biodiversity and Geological Conservation.

# 3. Water Voles

## 3.1 Background Information

*National*

During the early 1900s the water vole was common along the banks of rivers, streams, canals, ditches, lakes and ponds throughout the majority of mainland Britain. However, as the century progressed water vole populations suffered a long-term decline. At present populations are scarce and fragmented across their former range but maintain strongholds within southern and eastern Britain.

The Vincent Wildlife Trust (Strachan and Jeffries, 1993; 2000) carried out national water vole surveys in 1989-90 and 1996-98. These surveys show a long-term decline in numbers since 1900 with a dramatic decline through the 1990's. This makes the water vole Britain's fastest declining mammal and therefore a priority species for conservation action in the UK Biodiversity Programme (Worcestershire Biodiversity Action Plan 2008).

The primary reasons for the decline of populations is a combination of habitat loss and degradation, which in turn leads to fragmentation and isolation and the consequential increase in vulnerability to predation, principally from American mink (*Mustela vison*) (Barreto *et al*., 1998; Bonesi *et al*., 2002; Strachan and Moorhouse, 2006; Woodroffe *et al*., 1990). During the 1980s and 1990s a period of accelerated site loss occurred, resulting from a combination of the above with additional impacts from environmental factors such as droughts and flooding.

*Regional*

The population of water voles within the West Midlands and Worcestershire has suffered a similar decline to the national level trend with many areas throughout the region no longer supporting the species. However, small pockets of the former population within the urban environments of the West Midlands may have survived. This is primarily due to many of the reasons for the national decline having a lower impact within these already modified environments. Nonetheless population levels across the region have declined rapidly within the last few decades and many of the 'stronghold' sites continue to be under threat.

## 3.2 Understanding Water Voles

*The issues*

Water voles have suffered one of the most dramatic declines of any British mammal and as such many efforts are underway to develop an effective species recovery plan. Central to a population recovery is a reversal of the factors that originally caused the population to crash, particularly the compounding effects of habitat loss and degradation, population fragmentation and predation by feral American mink.

*Predation by American mink*

UK water voles are approximately 20% bigger than continental water voles and for this reason American mink are able to enter their burrows. A female mink with young is able to exterminate a water vole population within one or two years (Macdonald & Strachan, 1999).

*Habitat Loss*

In the last hundred years we have lost the majority of our wetlands though draining and development, and many of our rivers have become inhospitable for wildlife through human modifications and insensitive bank side and channel management. Although increased awareness among the main riparian owners has led to improvements in some places, several types of habitat loss are still threatening water voles (Worcestershire Biodiversity Action Plan, 2008). These include:

- Development on the floodplains of rivers leading to containment of river channels and loss of riparian habitat.
- Intensive engineering, bank protection and maintenance work to rivers and canals often damages bankside habitat.
- Intensive grazing by livestock causes poaching of banks and the destruction of burrows and bankside vegetation.
- Inappropriate, intensive mowing of the bank and vegetation clearance results in water voles being increasingly vulnerable to predators.
- Lack of management can lead to degradation of the waterside habitat through siltation, drying out or invasion by scrub and Himalayan balsam.
- Loss of ponds and the degrading of associated habitat through development and farming practices.

*Population Fragmentation*

Fragmentation of the population from habitat loss and degradation may accelerate the rate of local population decline. Isolated groups are more vulnerable to environmental change and extinction and survival rate is enhanced if colonies are connected.

*Other Threats*

- Excessive fluctuations in water levels due to land drainage or flooding can damage riverbanks and burrows.
- Drought conditions can expose burrows making the water vole more vulnerable to predators.
- Poisoning by the use of rodenticides is a major threat in urban situations.

The recovery of water vole populations across most of its former range is not impossible but requires properly targeted resources and a focused conservation effort. Much of the required information may come from targeted research and experimental trials but maintaining existing populations in a favourable state will also be paramount to recolonisations and range expansions.

*Legislation*

The water vole received limited legal protection in April 1998 through its inclusion in Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) for some offences. This

protection has recently been extended (6th April 2008), so the water vole is now fully protected under Section 9.

Legal protection makes it an offence to:
- intentionally kill, injure or take (capture) a water vole;
- possess or control a live or dead water vole, or any part of a water vole;
- intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place;
- sell, offer for sale or advertise for live or dead water voles.

*Planning and policy guidance*

As protected species the water vole is highlighted under planning policy guidance. In England the Planning and Policy Statement on Biodiversity and Geological Conservation (PPS9, 2005) and associated circulars (ODPM Circular 06/2005; DEFRA Circular 01/2005 – Biodiversity and geological conservation – statutory obligations and their impacts within the planning system). These state that local authorities should take measures to protect the habitats of species of principle importance for the conservation of biodiversity (including the water vole) from further declines through policies in local development documents (Strachan and Moorhouse, 2006).

*Biology*

The water vole also known as the water rat, is the largest of the British voles, with adults weighing 140-350g. Although a good swimmer and diver the water vole has very few adaptations to its aquatic habitat. Water voles are most frequently mistaken for brown rats (*Rattus norvegicus*) which also frequently inhabit waterside habitats and are also good swimmers.

Water voles are herbivorous, feeding primarily on the fresh growth of waterside plants. Nationwide 227 plant species have been found at feeding stations (Strachan and Jefferies, 1993) and during winter water voles will eat the roots and bark of woody species, along with rhizomes, bulbs and roots of herbaceous species. Voles utilise a network of burrows comprising many entrances, connecting tunnels and food storage chambers. Nest chambers can occur at different levels within the burrow network with grasses used for bedding. In addition, above ground nests also occur with dense nests at the base of sedges and reeds, usually in areas with high water table levels.

Above ground activity is largely confined to runs in dense vegetation within 5m of the water's edge. There tends to be a strong preference towards areas with grass tussocks and emergent plants while avoiding sites which are heavily trampled, grazed or overshaded by dense scrub.

The bank substrate is also very important for water voles, since earth that is too stony is unsuitable for burrowing in. In general water voles also appear to prefer a steep ($>45^{o}$) soft bank of earth or soil at least 30cm above water level where they burrow and create nest chambers (Macdonald and Strachan 1999). Similarly, sites that suffer large fluctuations in water levels are selected against as this can lead to either excessive flooding or over exposure to predators.

Although water voles tend to live in colonies they maintain a series of contiguous territories along the length of a watercourse. As a result territory size is often measured in length and not

area as is the case with most other mammals. Some exceptions exist in the case of large reedbeds. Breeding female water voles generally hold exclusive territories although females will share their territory with their offspring. Males are less territorial and hold territories that overlap those of several other males and females. Dependent on overall population density, season and habitat, female and male territories ranges from 30m to 150m and 60m to 300m respectively. The larger figures apply when population density is low or habitat quality poor.

Extensive research has been undertaken on the habitat preferences of water voles (Barreto *et al*., 1998; Bonesi *et al*., 2002; Lawton and Woodroffe 1991; Macdonald and Strachan 1999; Telfer *et al*., 2001) and the general preferences appear to focus on the need for wide swathes of riparian vegetation, both on the banks and within the channel, serving as both food and shelter. Additionally, water voles prefer easily penetrable banks and a water course which is slow flowing and relatively deep (over 1m of depth). Factors such as rocky banks, over shading by trees, fast flowing or shallow water and the presence of American mink are adverse to the presence of water voles.

## 4. Badgers

Badgers are widespread across the UK and in some areas locally abundant. However, in the past the badger population in the UK has been severely threatened by persecution and loss of habitat and as a result they receive specific protection under the *Protection of Badgers Act 1992* and the *Wildlife Order (Northern Ireland) 1985*.

Under this legislation it is illegal to:
• wilfully kill, injure, take, possess or cruelly treat a badger or attempt to do so
• intentionally or recklessly damage, destroy or obstruct access to a badger sett whether or not it is occupied at the time
• disturb a badger while it is occupying a sett
• sell, keep or mark a healthy badger or possess any dead badger or part thereof.

## 5. Great Crested Newts

The great crested newt prefers shallow edged ponds, with abundant vegetation and no fish. Such ponds may be located within farmland, woodland, grasslands, dunes, quarries, brown-field sites, and residential gardens, provided that local habitat structure is varied, and there are suitable ‘refuges’ available. Connectivity between suitable ponds and associated terrestrial habitat is important to maintain metapopulations.

Decline in the great crested newt population is linked to changes in agricultural practices, in particular the loss of the breeding ponds and the introduction of fish which feed on the eggs of the great crested newt and invasive non-native plant species.

*Legislation*

The great crested newt is protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take (capture) a great crested newt, possess or control a live or dead great crested newt, or any part of a great crested newt, intentionally or recklessly damage, destroy or obstruct access to any structure or place which great crested newt use for shelter or protection or disturb great crested newts while they are using such a place or sell, offer for sale or advertise for live or dead great

crested newt. The great crested newt is also on the UK Biodiversity Action Plan (BAP) list of Priority Species, which lists those species and habitats that are considered a priority for conservation action.

In addition, the great crested newt is a European protected species under Schedule 2 of the Conservation of Habitats and Species Regulations 2010. This lists European Protected Species which are on Annex IV (a) on the Habitats Directive whose natural range includes any area in Great Britain and under Schedule 2 it is an offence to deliberately capture, injure or kill a great crested newt, deliberately disturb them, take or destroy eggs or damage or destroy breeding or resting sites of the great crested newt. It is also an offence to impair their ability to survive, breed or reproduce or rear their young, to hibernate or migrate or to be in possession of, control, transport, sell or exchange any live or dead animal or part of the great crested newt.

## 6. METHODOLOGY

### 6.1. Bats

Bat surveys were carried out by Edward Leszczynski (Natural England Licence No.: 20093102), Liz McKay (Natural England Licence No.: 20090536) and Gwennan Hughes of Worcestershire Wildlife Consultancy on 21st June and 28th June 2010. The weather was dry on both visits.

*Habitat Assessment*

From the Phase I survey, one tree, a veteran (and slightly burnt out) penduculate oak was identified as offering potential roosting opportunities for bats. Bats have evolved to roost in trees because they offer a broad range of micro-habitats with differing intensity of temperature, shelter and humidity. Trees are of particular importance for summer roosting where bats may use them for maternity roosts, depending on the size and species. Due to difficulties in accessing the tree, it was not directly surveyed, however, during the second transect, the area within the immediate vicinity of the tree was surveyed.

There were no buildings on site and therefore no buildings were assessed for bats.

*Activity Surveys*

Two separate evening activity surveys were undertaken, focusing on general activity across the site and consisting of a series of transects. All surveys were conducted in accordance with Bat Conservation Trust Bat Surveys – Good Practice Guidelines (2007). A transect was walked over the entire site with periodic stops at suitable locations.

On each survey, transects were walked with both a BatBox Duet and Petterson D230 working in both heterodyne and frequency division to obtain a broadband assessment of bat activity. Transects were walked along the predefined route at a slow but steady speed. A stop period of three minutes was undertaken at each listening stop. All bat activity and weather conditions were recorded on recording sheets. During each survey, the site was walked around twice.

## 6.2. Water voles

A survey for water voles were undertaken following the survey guidelines outlined within the *Water Vole Conservation Handbook* (Strachan and Moorhouse, 2006). All field work was undertaken during the optimal period for surveys (late April to early October). Kerry Kilshaw and Gwennan Hughes of Worcestershire Wildlife Consultancy undertook the survey on 20th August 2010.

The watercourses were surveyed from within the channel, depending on access, channel morphology and vegetation constraints. At all times, searches for field signs confirming the presence of water voles, brown rat, American mink and otter (*Lutra lutra*) were undertaken. The location of all field signs were noted with location, type and species (or possible species where signs were inconclusive). Field maps were produced of all surveyed sections including notes on field signs as well as habitat notes such as dominant vegetation, adjacent land use, flood debris and evidence of pollution (see Appendix 5 – 12).

Water vole field signs include:

- Direct sightings
- Latrines – most water vole faeces are deposited at latrine sites near the nest or at boundary edges close to the waters edge. When water voles are present at a site latrines are maintained between February and November with fresh droppings, often deposited on top of old ones. Latrine sites are the most reliable form of identification.
- Faeces – Water vole faeces are between 8-12mm long and 4-5mm wide, they are smaller than rat droppings and have a putty-like texture.
- Burrows – Water vole burrows are normally wider than they are high and may be submerged or high up the bank.
- Feeding stations – Water voles will leave piles of chewed vegetation at a favoured feeding site or platform on the waters edge for consumption or removal into the burrow. A cautionary approach is taken when feeding remains alone are identified as these can be confused with the feeding remains of bank vole (*Myodes glareolus*) and field vole (*Microtus agrestis*) (Ryland and Kemp 2009).
- Footprints – Water vole tracks tend to occur at the waters edge where they are easily seen in the mud.
- Grazing lawns - areas around burrows, normally nursing burrows where the female comes out of the hole to graze the vegetation immediately around it.
- Runways – lead to the waters edge and may branch many times, normally about 5-9cm wide.

Where latrines or sightings were absent water vole presence was only confirmed by the presence of at least three of the above field signs.

Mink signs surveyed for included**:**

- Direct sightings
- Scats – mink scats are 5-8cm, cylindrical with tapered ends, they are dark and often smell unpleasant
- Footprints – mink have distinctive footprints that have visible claw marks. Footprints are often in pairs due to the way the mink run
- Feeding remains – including birds, fish, rodents and amphibians

Rat signs surveyed for included:

- Direct sightings
- Faeces – bigger than water voles, tend to be scattered along a run rather than at distinct latrine sites, have an unpleasant smell that resembles ammonia
- Burrows – larger than water vole burrows, 8-10cm and often have spoil heaps outside their entrances
- Runs – clear or bare pathways linking burrows
- Footprints – larger than water voles

Otter signs surveyed for included:

- Direct sightings
- Scats – otter scats are large and often have scent jelly and are usually left in prominent sites. Bones of fish prey are also usually visible.
- Footprints – comparatively large footprints with webbing usually visible.
- Feeding remains – principally fish.
- Dens – large with clear path leading to waters edge.

### 6.3. Badgers

During the Phase I survey, a single hole was found along the track close to the southern edge of the site that had some potential of badger use.

The site in general was assessed for evidence pertaining to the presence of badgers including setts, latrines, tracks, snuffle holes, padding or guard hairs. Particular attention was paid to the hole previously identified and the area within the immediate vicinity of the hole. Edward Leszczynski undertook a badger survey on 21st June 2010 and Kerry Kilshaw and Gwennan Hughes of Worcestershire Wildlife Consultancy undertook a badger survey on 20th August 2010.

### 6.4. Great Crested Newts

The Phase I survey highlighted the need for a dedicated great crested newt survey to be carried out at the two ponds on the site.

A Habitat Suitability Index (HSI) was undertaken at both ponds. This is a standard assessment method developed specifically to evaluate the habitat suitability for great crested newts a series of factors must be considered. Each factor is assessed along suitability guidelines and allocated a value of between 0.1 (highly unsuitable) to 1.0 (highly suitable). The geometric mean of these values provides an overall suitability score for the site. Although this is no substitute for a dedicated survey it does give an indication of whether such a survey is needed.

For presence/absence surveys a minimum of four visits should be made in suitable weather conditions between March and June with at least two of the visits in mid-April to mid-May. Presence/absence surveys were undertaken by Edward Leszczynski (Natural England licence number 20100987) and Liz McKay (Natural England licence number 20100987) on 29th April, 7th May, 20th May and 24th June 2010, using a combination of netting, torching, egg-searching and direct observation. In addition a Habitat Suitability Index for each pond was calculated.

# 7. RESULTS AND DISCUSSION

## 7.1 Data Search

The biological data search from Worcestershire Biological Records Centre yielded records of several protected species within 2km of the site. These included badger, great crested newt, water vole and a number of different bat species. Only great crested newts have been recorded from this site, during a survey in 1999. Please refer to Appendix 2 for full details of these and other species.

## 7.2. Site Description

The site consists of approximately 14.7ha of low-lying land forming a triangle between the residential suburb of Winyates Green and the two main roads; the A4023 and A435.

The majority of the land consists of old permanent agricultural grassland divided by a number of hedges with an old wooded lane (Ravensbank Drive Bridle Track SWS) forming the western boundary of this triangle. Amenity grassland and more recent woodland planting follow either side of Far Moor Lane; the access road to the residential housing that forms the south-western boundary of the site.

## 7.3. Bats

A total of 4 different bat species were detected on site during the two surveys; the most frequent recordings were of the common pipistrelle.

**Activity Survey One – 21st June 2010 Sunset: 21:17**

| Factor | Start of survey | End of survey |
|---|---|---|
| Time | 21:30 | 23:10 |
| Temperature °C | 16.8 | 15.4 |
| Wind speed | Still | Still |
| Wind direction | - | - |
| Cloud cover (%) | 0 | 0 |
| Precipitation | None | None |
| General | Clear and still, warm with plenty of insects | |

For location of transects and timings please see Appendix 3

| Location | Time | Species Recorded | No. | Notes |
|---|---|---|---|---|
| Start – I | | | | No activity |
| I | 21:50 | *P.pipistrellus* | 2 | Heard and seen flying |
| A | 22:08 | *P.pipistrellus* | 1 | Seen and heard flying |
| B | 22:10 | *P.pipistrellus* | 1 | Seen and heard flying along hedgerow |
| C | 22:15 | *P.pipistrellus* | 1 | Flying along hedgerow |
| E | 22:20 | *P.pipistrellus* | 1 | Seen and heard flying |
| L | 22:30 | *P.pipistrellus* | 1 | Flying along hedgerow |
| L-K | 22:30-22:35 | *P.pipistrellus* | 1 | Foraging along hedgerow |
| K | 22:35 | *P.pipistrellus* | 1 | Flying along hedgerow |
| J | 22:38 | *N.noctula* | 1 | Heard but not seen passing over site |
| H | 22:40 | *P.pipistrellus* | 1 | Heard flying |
| F | 22:45 | *P.pipistrellus* | 1 | Seen and heard flying |
| D | 22:50 | *P.pipistrellus* | 1 | Seen and heard flying |
| B | 23:00 | *Myotis sp.* | 1 | Heard briefly |

**Activity Survey Two – 28th June 2010 Sunset: 21:06**

| Factor | Start of survey | End of survey |
|---|---|---|
| Time | 21:15 | 22:55 |
| Temperature °C | 19.1 | 18.2 |
| Wind speed | Still | Still |
| Wind direction | - | - |
| Cloud cover (%) | 70 | 70 |
| Precipitation | None | None |
| General | Overcast evening but dry and still | |

For location of transects and timings please see Appendix 4

| Location | Time | Species Recorded | No. | Notes |
|---|---|---|---|---|
| Start - I | 21:15 | | | No activity |
| H | 21:45 | *P.pipistrellus* | 1 | Brief burst of activity heard |
| J | 21:48 | *P.pipistrellus* | 1 | Flying across the site to the NE |
| L | 21:51 | *P.pipistrellus* | 1 | Brief pass |
| L | 21:51-21:53 | *P.pipistrellus* | 2 | Flying along hedgerow |
| K | 21:53 | *P.pipistrellus* | 1 | Flying across the site to the NE |
| G | 21:59 | *P.pipistrellus* | 1 | Brief pass |
| E | 22:08 | *P.pipistrellus* | 2 | Foraging along hedgerow |
| E-F | 22:13 | *P.pipistrellus* | 1 | Heard feeding briefly overhead |
| F | 22:15 | *P.pipistrellus* | 1 | Foraging along hedgerow |
| D | 22:21 | *P.pigmaeus* | 1 | Heard briefly |
| C | 22:25 | *P.pipistrellus* | 1 | Brief pass |
| A | 22:27 | *P.pipistrellus* | 1 | Heard briefly |
| F | 22:33 | *P.pipistrellus* | 1 | Brief pass |

## 7.4. Water Vole

No evidence of water vole was found on site. Please see Appendix 5 – 12 for details of the survey results.

*Field Signs*

Table 1: Water vole field signs

| Survey Date | Count | | | Presence/Absence | | | |
|---|---|---|---|---|---|---|---|
| | Sightings | Latrines | Burrows | Footprints | Runways | Feeding Remains | Lawns |
| 20th August 2010 | 0 | 0 | 3 | Absent | Absent | Absent | Absent |

Several holes were found that could not be confirmed as either water vole or brown rat.

*Other Wildlife*

Table 2: Other wildlife field signs

| Species | Sightings | Droppings | Footprints | Runways |
|---|---|---|---|---|
| Brown Rat | Absent | Absent | Absent | Absent |
| American Mink | Absent | Absent | Absent | Absent |
| Otter | Absent | Absent | Absent | Absent |
| Other notes | Extensive use by cattle | | | |

*Habitat Description*

Please see Appendix 1 for a map of the survey site.

**Streams**

Stream A runs alongside the western boundary of the site, heading north (Please refer to plates 1 and 2 of Appendix 13 for images of stream A). The stream is narrow and shallow and is bordered on the east predominantly by an area of broadleaved plantation; mainly alder (*Alnus glutinosa*), hazel *(Corylus avellana*), oak (*(Quercus robur)* and hawthorn *(Crataegus monogyna)* with occasional field maple *(Acer campestre)* and elder *(Sambucus nigra)*. Halfway along the eastern edge of the stream is an area of scrub, predominantly nettles *(Urtica dioica),* ivy *(Hedera helix)* and bramble (*Rubus fruticosus*). Along the western edge of the stream, the earth banks are bare in several patches with locally abundant scrub including dogs mercury *(Mercurialis perennis)*, herb Robert (*Geranium robertianum*), holly (*Ilex aquifolium*) and ivy dominating the bank side vegetation. The rest of the eastern edge of the stream is covered in wooded areas, mainly blackthorn, hawthorn, alder and hazel with the occasional ash *(Fraxinus excelsior)*. The stream bed has a deep layer of silt (~ 15-20cm), under which is a layer of gravel. A large section of the stream is covered by low over hanging branches and fallen logs, making access difficult.

Stream B runs into stream A at the northern end of the site (Please refer to plates 3 and 4 of Appendix 13 for images of stream B). The stream is very shallow and narrow, although becomes slightly deeper and wider towards the east of the site. The substrate along the stream is a mixture of pebbles, fine gravel and silt with the vegetation within the stream including frequent flote grass *(Glyceria fluitans),* fools water-cress *(Apium nodiflorum),* brooklime

*(Veronica beccabunga)* and the occasional watercress, *(Rorippa nasturtium-aquaticum).* A broadleaved hedgerow lies along the length of the northern edge of the stream; this is predominately coppiced hawthorn, blackthorn and crab apple *(Malus sylvestris)*, with several oak, ash, hazel and goat willow (*Salix caprea).* Several of the trees overhang the stream. The southern edge of the stream is lined with mainly long grass with dense patches of scrub including nettles, creeping thistle (*Cirsium arvense*), great willow herb *(Epilobium hirsutum)*, and wood dock (*Rumex sanguineus*). The stream flows under a small brick culvert at the eastern boundary of the site.

Stream C also runs into stream A further downstream from stream B (Please refer to plates 5-8 of Appendix 13 for images of stream C). The substrate is mainly gravel, earth and silt with areas of larger pebbles. The stream is at first shallow towards the eastern end but soon cuts deeply within the dense scrub further west with earth banks over 2.4m high along a large section of the stream and the water becoming up to 0.3m deep, the stream and the banks becomes shallower again towards the western end. The stream is generally narrow but widens slightly where the banks are higher. The stream runs out of a large brick culvert (~ 3m high) and stream D feeds into stream C immediately downstream from this culvert. Where the stream is shallow and the banks low, several areas have heavily disturbed by cattle. The stream is bordered along its northern bank by a mixed hedgerow. Around the culvert and half way along the stream are dense wooded areas that cover the stream completely with many low hanging branches and fallen trees; these areas are composed mainly of hawthorn, elder and ivy covered in patches of dense bramble with several large overhanging trees including field maple and oak. The bank is generally bare in these areas, with both the bank and the stream becoming more overgrown as the banks become shallower. Towards the western end of the stream, the southern boundary is covered in patches of bramble, creeping thistle, wood dock and long grass.

Stream D emerges from a culvert on the eastern edge of the site flowing immediately into a wide (~ 3m), shallow muddy area completely covered by a dense stand of hawthorn, blackthorn and bramble. Please refer to plates 9 and 10 of Appendix 13 for images of stream D. The banks under this cover are bare and the area shows signs of heavy disturbance by cattle. From here, stream D flows under an open grassy area into the main body of the ditch. Here the banks are initially low on the west side before rising steeply on both sides to a height of about 8ft until the stream joins stream C. The stream is covered on both sides by a dense overhanging tree stand, mainly hawthorn and blackthorn, many of which have fallen branches over the stream. In some places the overhanging branches are so low and dense that access along the stream was not possible. The banks are mainly bare, with ivy and moss covering patches of earth and some patches of long grass and nettles where the canopy opens up briefly. Where the stream joins stream C there are a few small animal holes in the bank but no obvious signs to indicate which species is using them. The substrate is mainly gravel and silt and the stream was relatively shallow and narrow.

None of the streams surveyed appeared to be suitable for water voles due to the amount of heavy cover, lack of suitable food and shallow depth of water. Although the banks along sections of streams C and D were certainly of suitable substrate and height, the heavy cover along these banks and lack of vegetation for feeding on made these areas potentially hostile to water voles. In addition, several sections of the streams showed evidence of heavy cattle disturbance, again making these areas unsuitable for water voles.

**Ponds**

In addition to surveying the streams, the two ponds were examined. Pond 1 could not be accessed due to the very heavy growth of bramble. Based on the results of the Phase I survey however, it seems unlikely that water voles would be present here. Pond 2 had completely dried out and even if it had retained water, the heavy shading by hawthorn, bramble and the occasional ash tree means there is a lack of vegetation suitable for the water vole and therefore Pond 2 is also uninhabitable for water voles.

## 7.5. Badgers

No signs of badgers were identified on site and the hole previously identified as a potential badger hole was very overgrown and did not seem to be in use. A fox scat was found within 50m of the hole, supporting the conclusions of the Phase I survey that even if the hole was being used, it was most likely to be by a fox rather than a badger and on an infrequent basis.

## 7.6. Great Crested Newts

In order to evaluate the habitat suitability for great crested newts a series of factors must be considered. For this process we use the Habitat Suitability Index (HSI), a standard assessment method developed specifically for great crested newts (Oldham *et. al.*, 2000). Each factor is assessed along suitability guidelines and allocated a value of between 0.1 (highly unsuitable) to 1.0 (highly suitable). The geometric mean of these values provides an overall suitability score for the site.

Research on great crested newt site suitability identified that sites where great crested newts were found varied in overall habitat suitability with an index value from 0.53 to 0.96.

**Pond 1 – small pond to the south western corner of the site**

*Geographic Location*

Based on known distribution of great crested newts, Worcestershire is located within Zone A and has a high probability of the presence of great crested newts within each 10km square. Suitability Index Value = 1.00.

*Pond Area*

Pond area is a determinant of the magnitude of biological productivity of the pond ecosystem upon which the newt population depends. Ponds between 500 and 750m$^2$ provide the optimal size. This pond had an estimated surface area at the time of visit of approximately 40m$^2$. Suitability Index Value = 0.05

*Pond Permanence*

Pond permanence is essential to permit the completion of metamorphosis in any given year: however, intermittent (every few years) drying out may be beneficial in excluding fish populations. The optimum drying out frequency is assumed to be one in every ten years. Although drying out frequency is impossible to be accurate on from a single year, as the pond was completely dry at the time of the survey it is likely that the pond dries out at least once every year. Suitability Index Value = 0.1

*Water Quality*

There was no water in the pond; therefore water quality could not be assessed. Suitability Index Value = 0.01

*Pond Shading*

Shade counteracts the growth of macrophytes and the benefits they provide. Additionally heavy tree cover increases the organic content through leaf fall potentially causing eutrophication. Great crested newts tend to favour ponds with a shade cover of between 60% and 75%. The pond was estimated to have shade coverage of 80%. Suitability Index Value = 0.6.

*Waterfowl*

Common waterfowl in naturally occurring numbers have little effect on great crested newt populations. However, if at high artificial numbers due to supplementary feeding they can seriously damage the habitat. This pond had no waterfowl present during the site visit. Suitability Index Value = 1.00.

*Fish*

Due to the lack of water, no fish were observed in this pond. Suitability Index Value = 1.00.

*Pond density*

A network of suitable ponds within a landscape increase the chances of great crested newts in an area, through the metapopulation processes of recolonisations from surrounding ponds if any one population becomes extinct. As far as can be determined from aerial photographs and OS maps there is only 1 pond within 1km², Suitability Index Value = 0.38

*Proportion of 'Newt Friendly' Habitat*

The habitat occupied by great crested newts is highly variable and we do not understand the species' detailed requirements at different phases of their life on land. However, scrub, unimproved grassland, woodland and gardens are regarded as newt friendly habitat, unlike improved pasture, arable and urban habitats. Additionally, features such as ditches and hedges enhance the habitat suitability of any site. Features such as roads and rivers form serious barriers dependent on width and flow of traffic and water. Such barriers cause issues with direct mortality but also through their impact on metapopulation dynamics.

The vast majority of the surrounding habitat is of average structure in the form of semi improved pasture which is grazed by cattle, and the pond is surrounded by heavy scrub offering some opportunities for foraging and shelter. The hedgerows and associated ditches also offer links to wider landscape and a certain amount of habitat themselves. Suitability Index Value = 0.67.

*Macrophyte Content*

Macrophytes are important for newts as they provide habitat for their prey organisms, provide cover from predators and a substrate for egg attachment. At the time of the visit no extensive

submerged and emergent macrophytes were seen. The total cover was assessed as 20%. Suitability Index Value = 0.50.

*Suitability Evaluation*

The overall Habitat Suitability Index for the site is calculated as the mean of the suitability Indices.

**Pond 1**

| Habitat Suitability Index | Factor | Value | Rating for Index |
|---|---|---|---|
| HS1 | Geographic Location | 1.00 | *Excellent* |
| HS2 | Pond Area | 0.05 | *Poor* |
| HS3 | Drying out frequency | 0.10 | *Poor* |
| HS4 | Water Quality | 0.01 | *Poor* |
| HS5 | Shade | 0.60 | *Average* |
| HS6 | Fowl | 1.00 | *Excellent* |
| HS7 | Fish | 1.00 | *Excellent* |
| HS8 | Pond Count | 0.38 | *Poor* |
| HS9 | Terrestrial habitat | 0.67 | *Average* |
| HS10 | Macrophytes | 0.50 | *Below Average* |
| **Overall HSI Value** | | **0.29** | **Poor** |

Pond 1 has a value of 0.29, which means that it is considered to have poor suitability for great crested newts. The suitability of the pond is greatly reduced by the fact that it was totally dry and is very small.

**Pond 2 – small pond to the south western the site within one of the hedgerows**

*Geographic Location*

Based on known distribution of great crested newts, Worcestershire is located within Zone A and has a high probability of the presence of great crested newts within each 10km square. Suitability Index Value = 1.00.

*Pond Area*

This pond had an estimated surface area at the time of visit of approximately $72m^2$. Suitability Index Value = 0.2

*Pond Permanence*

During the course of the surveys, the pond became increasingly dry and by the time the water vole survey was carried out in August the pond had completely dried out. Therefore it is likely that the pond dries out at least once every year. Suitability Index Value = 0.1

*Water Quality*

Although the adult great crested newt is relatively tolerant of eutrophic conditions, the larvae are more vulnerable and require reasonably well aerated water with a number of aquatic

invertebrates. The water quality was poor, with a low number of invertebrates and the bed was covered with silt. Suitability Index Value = 0.33

*Pond Shading*

The pond was estimated to have shade coverage of 95%. Suitability Index Value = 0.3.

*Waterfowl*

This pond had no waterfowl present during the site visit. Suitability Index Value = 1.00.

*Fish*

The effect of fish on newt populations varies across species and ponds. However in general the presence of fish species are detrimental to newt populations. In particular the stickleback has a very serious impact, through predation and competition. There are no fish known to occur in this pond. Suitability Index Value = 1.00.

*Pond density*

As far as can be determined from aerial photographs and OS maps there is 1 pond within 1km², Suitability Index Value = 0.38

*Proportion of 'Newt Friendly' Habitat*

The vast majority of the surrounding habitat is of average structure in the form of semi improved pasture which is grazed by cattle, and the pond was surrounded by heavy scrub offering some opportunities for foraging and shelter. The hedgerows and associated ditches also offer links to wider landscape and a certain amount of habitat themselves. Suitability Index Value = 0.67.

*Macrophyte Content*

At the time of the visit no submerged and emergent macrophytes were seen. The total cover was assessed as 0%. Suitability Index Value = 0.30.

**Pond 2**

| Habitat Suitability Index | Factor | Value | Rating for Index |
|---|---|---|---|
| HS1 | Geographic Location | 1.00 | *Excellent* |
| HS2 | Pond Area | 0.20 | *Poor* |
| HS3 | Drying out frequency | 0.10 | *Poor* |
| HS4 | Water Quality | 0.33 | *Poor* |
| HS5 | Shade | 0.30 | *Poor* |
| HS6 | Fowl | 1.00 | *Excellent* |
| HS7 | Fish | 1.00 | *Excellent* |
| HS8 | Pond Count | 0.38 | *Poor* |
| HS9 | Terrestrial habitat | 0.67 | *Average* |
| HS10 | Macrophytes | 0.30 | *Poor* |

| **Overall HSI Value** | | **0.41** | **Poor** |
|---|---|---|---|

Pond 2 also has poor suitability for great crested newts with an overall HSI value of 0.41. In this case the overall suitability is clearly decreased by the amount of shade covering the pond, the lack of macrophyte coverage and the high drying out frequency.

It should be noted that these scores do not preclude the pools from supporting breeding great crested newts but it does suggest that their presence is unlikely or at least very low.

### 7.6.1. Presence/absence surveys

The surveys were undertaken in April, May and June, the optimum period for great crested newt surveys. A combination of direct observation, netting, torching and egg-searching was used to maximise the chances of encountering newts and to establish whether breeding occurs.

**Survey 1**

| **Site:** | **Pond 2** | **Date:** | 29th April 2010 |
|---|---|---|---|
| **Surveyor:** | Edward Leszczynski | | |

| **Start Time:** | 21:45 | **Finish Time:** | 22:15 |
|---|---|---|---|
| **Survey Methodologies:** | Torch, net, egg-search, visual. | | |

| **Air Temp:** | 11.3º C | **Precipitation:** | None |
|---|---|---|---|
| **Cloud Cover (%)** | 10 | **Ground conditions** | Dry |

| Common Frog | | | | Common Toad | | | | Smooth Newt | | Palmate Newt | | Great Crested Newt | | | Unidentified small newt | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ♂ | ♀ | Pair | Spawn/ larvae | ♂ | ♀ | Pair | Spawn /larvae | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | Egg/larvae | ♀ | Egg/ larvae |
| | | | Lots | | | | | 1 | | | | 2 | | | | |
| **Notes** | | | | Water level fairly low, appears to be drying out | | | | | | | | | | | | |

**Survey 2**

| **Site:** | **Pond 2** | **Date:** | 7th May 2010 |
|---|---|---|---|
| **Surveyor:** | Edward Leszczynski | | |

| **Start Time:** | 22:00 | **Finish Time:** | 22:30 |
|---|---|---|---|
| **Survey Methodologies:** | Torch, net, egg-search, visual. | | |

| **Air Temp:** | 9.7º C | **Precipitation:** | None |
|---|---|---|---|
| **Cloud Cover (%)** | 90 | **Ground conditions** | Dry |

| Common Frog | | | | Common Toad | | | | Smooth Newt | | Palmate Newt | | Great Crested Newt | | | Unidentified small newt | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ♂ | ♀ | Pair | Spawn/ larvae | ♂ | ♀ | Pair | Spawn /larvae | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | Egg/ larvae | ♀ | Egg/ larvae |
| 2 | 1 | | Lots | | | | | 2 | | | | 1 | | | | |
| **Notes** | | | | Virtually no water | | | | | | | | | | | | |

## Survey 3

| | | | |
|---|---|---|---|
| **Site:** | **Pond 2** | **Date:** | 20th May 2010 |
| **Surveyor:** | Liz McKay and Edward Leszczynski | | |

| | | | |
|---|---|---|---|
| **Start Time:** | 22:05 | **Finish Time:** | 22:30 |
| **Survey Methodologies:** | Torch, net, egg-search, visual | | |

| | | | |
|---|---|---|---|
| **Air Temp:** | 13.1 | **Precipitation:** | None |
| **Cloud Cover (%)** | 20 | **Ground condition** | Dry |

| Common Frog | | | | Common Toad | | | | Smooth Newt | | Palmate Newt | | Great Crested Newt | | Unidentified small newt | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ♂ | ♀ | Pair | Spawn/ larvae | ♂ | ♀ | Pair | Spawn /larvae | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | ♀ | Egg/ larvae |
| 2 | 1 | | Lots | | | | | 2 | | | | 1 | | | |
| **Notes** | | | | Water level very low | | | | | | | | | | | |

## Survey 4

| | | | |
|---|---|---|---|
| **Site:** | **Pond 2** | **Date:** | 24th June 2010 |
| **Surveyor:** | Liz McKay and Edward Leszczynski | | |

| | | | |
|---|---|---|---|
| **Start Time:** | 22:15 | **Finish Time:** | 22:30 |
| **Survey Methodologies:** | Torch, net, egg-search, visual | | |

| | | | |
|---|---|---|---|
| **Air Temp:** | 17º C | **Precipitation:** | None |
| **Cloud Cover (%)** | 80 | **Ground conditions** | Dry |

| Common Frog | | | | Common Toad | | | | Smooth Newt | | Palmate Newt | | Great Crested Newt | | Unidentified small newt | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ♂ | ♀ | Pair | Spawn/ larvae | ♂ | ♀ | Pair | Spawn /larvae | ♂ | ♀ | ♂ | ♀ | ♂ | ♀ | ♀ | Egg/ larvae |
| 1 | | | 50-60 | | | | | | 1 | | | | | | |
| **Notes** | | | | Pond virtually dry, only mud | | | | | | | | | | | |

During the four surveys, a total of four great crested newts were found, all of which were male. In addition, six smooth newts were found, five males and one female. Pond 2 also supported five male and two female common frogs, along with frog spawn and tadpoles.

# 8. CONCLUSIONS AND RECOMMENDATIONS

## 8.1. Bats

Transects undertaken across the site highlighted relatively low levels of activity. Species present on site include common pipistrelle, soprano pipistrelle, noctule and *myotis* sp. However the level of activity for all species was low, even along diverse hedgerows and around the ditches and ponds. The generalist nature of pipistrelle bats was highlighted by the fact that this species was the most frequently seen and heard across the site, with foraging concentrated over the better quality hedges. Noctule bats also occasionally passed over the site as would be expected within this area.

Due to the low levels of activity across the site, there would appear to be **no obvious and immediate implications** for any future development with regards to foraging bats and

therefore there is no legal requirement under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 for a European Protected Species licence granted by Natural England.

However, it should be noted that the existing hedges do provide some level of connectivity across the site and to the wider countryside. It is therefore recommended that the design of any future development takes into account the need for connectivity and includes linear features such as hedgerows which offer foraging and commuting routes for bats within the area. These routes should ideally be 'dark' with only very low levels of light along their length.

As regards the mature large trees scattered along and within the main hedgerow which constitutes the green lane all of these trees must be retained in any future proposed development of the site as they provide valuable potential roosting sites for bats. All large mature trees on the site as a whole should be retained as they have the potential to develop features which could be used by bats as future roosting areas.

### 8.2. Water voles

The presence of water voles on site was not confirmed therefore there are **no further implications** with respect to water voles.

### 8.3. Badgers

Although no badger activity was found on site, it should be noted that badgers have been known to move onto sites at short notice. It is therefore recommended that prior to any development taking place in the future, the site and the hole should be reassessed to determine whether badgers have moved onto the site. This is likely to be in the form of brief monthly visits for a period of approximately 1-2 months using standard methods.

If badgers are found to be using the hole or the site, then there is **likely to be implications** for any proposed redevelopment under the Protection of Badgers Act 1992 and a licence may be required before any development takes place.

### 8.4. Great crested newts

There is one pond on site where great crested newts were recorded. Although the HSI score for this pond is 0.29 "Poor", the surrounding terrestrial habitat potentially creates opportunities for dispersal. Therefore **there may be implications under the Wildlife and Countryside Act 1981(as amended)** and the Conservation of Habitats and Species Regulations 2010.

Prior to any future developments taking place it is recommended that **a dedicated great crested newt population abundance survey should be undertaken**. This would entail six visits to the site using a variety of methods including torching, netting, egg searching and bottle trapping, undertaken between mid-March to mid-June with a minimum of two visits during mid-April to mid-May in any given year in order to establish the size of the population. In addition, a European Protected Species licence will be required before any development can commence. This must contain suitable mitigation measures to ensure that the favourable conservation status of the species is maintained. This can only be established using up to date data, which will need to be acquired near to the start date and therefore must

be scheduled once the timing of the construction project has been confirmed and well before any construction commences.

It is difficult to suggest detailed mitigation without detailed data but as a broad outline, the pond should be retained with sufficient terrestrial habitat around it to allow dispersal of great crested newts after breeding. There should also be a dispersal corridor to enable movement away from the immediate environs of the pond. In addition, as well as retaining the pond it should be enhanced for amphibians by careful re-profiling to create shallow sloping banks and planted with a suitable mix of native species to create an egg-laying strata. The smaller pond could be restored by removing vegetation and if possible within the confines of a small area enlarging and re-profiling it to create a second breeding pond. It should be stressed that these are only outlines and that more detail must be added once the population has been surveyed and when the final design of the development is known

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Worcestershire Biodiversity Action Plans. http://www.worcestershire.gov.uk/cms/environment-and-planning/biodiversity.aspx

## Appendix 1: Site Map


Winyates Triangle, Redditch.

Worcestershire wildlife CONSULTANCY


www.worcestershirewildlifeconsultancy.org Tel 01905 754909

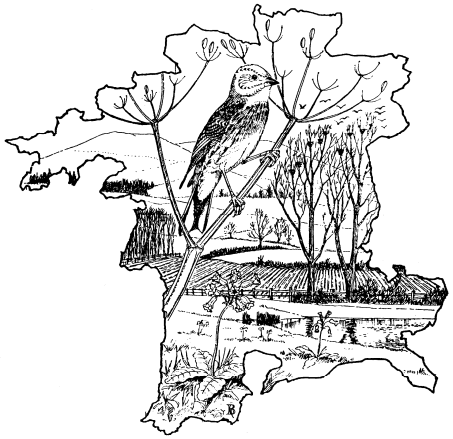
Scale at A4:
Main Map: 1:3,000
Inset Map: 1:2,500,000

Produced
August 2010

N

Worcs Warks

**Appendix 2: Data search results**




# Worcestershire Biological Records Centre

*Lower Smite Farm,*
*Smite Hill, Hindlip, Worcester, WR3 8SZ*
*Tel: 01905 759759. email records@wbrc.org.uk*
*Web site www.wbrc.org.uk*


**Protected species records held by WBRC as at 20/04/10 for 2km radius around SP084682 (Ref: 2010/050).**

| Scientific Name | Common Name | [redacted] | Location Name | Date | Status | Comments |
|---|---|---|---|---|---|---|
| *Arvicola terrestris* | Water Vole | [redacted] | Holt End Meadows | June 2004 | WCA5(S9(4a, 4b)), NERC s.41, Worcs BAP | |
| *Meles meles* | Badger | [redacted] | Warwick Highway | 07/08/2001 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Gorcott Hill | 01/02/2002 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Ullenhall Lane Oldberrow | 13/02/2003 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Beoley North | 03/06/2003 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | A4023 | 16/04/2007 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | A4023 | 16/04/2007 | BC3 PBA WCA6 | dead on road |
| *Meles meles* | Badger | [redacted] | Beoley / Church Hill | 23/02/2009 | BC3 PBA WCA6 | Badgers seen here before but not recorded. |
| *Myotis* | Unidentified Bat | [redacted] | St. Leonard's Church, Beoley | 27/07/1992 | BC2 BoC2 ECH4 WCA5,6 | Bats flying round house, droppings in roof space. Possibly Whiskered bats. |
| *Myotis daubentoni* | Daubenton's Bat | [redacted] | 12 Wolverton Close, Ipsley | 09/06/2006 | BC2 BoC2 ECH4 WCA5,6 | Dung or other signs |

| | | | | | | |
|---|---|---|---|---|---|---|
| *Pipistrellus* | Pipistrellus | [redacted] | St. Leonard's Church, Beoley | 27/07/1992 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | Bats seen flying round house and possible droppings in roof space. |
| *Pipistrellus* | Pipistrellus | [redacted] | Cheswick Close, Winyates Green | 21/02/2006 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | Bats in cavity wall and roof space, droppings present |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | Fairford Close, Church Hill, Redditch | 22/07/2003 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | Droppings and mummified bat under coping tiles. |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | Ipsley Alders Marsh | 25/05/2005 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | Ipsley Middle School, Winyates | 24/05/2006 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | ID from captured bat. In cavity wall between computer & server rooms. |
| *Pipistrellus pipistrellus* | Pipistrelle | [redacted] | 12 Wolverton Close, Ipsley | 09/06/2006 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | Roosting |
| *Pipistrellus pipistrellus 45kHz* | 45 Khz Pipistrelle | [redacted] | Moon's Moat | 2001 | BC3 BoC2 ECH4 WCA5,6, Worcs BAP | |
| *Plecotus auritus* | Brown Long-Eared Bat | [redacted] | St. Leonard's Church, Beoley | 27/07/1992 | BC2 BoC2 ECH4 WCA5,6, NERC s.41 | Droppings under beams & bats observed on rafters. |
| *Plecotus auritus* | Brown Long-Eared Bat | [redacted] | Brookside, Holt End, Redditch | 11/02/2005 | BC2 BoC2 ECH4 WCA5,6, NERC s.41 | ID uncertain. Droppings at back of chimney stack & a bat flew when tile was lifted |
| *Triturus cristatus* | Great Crested Newt | [redacted] | Arrow Valley Park, Pond 78 | 25/04/1998 | BC2 ECH2,4 WCA5, NERC s.41, Worcs BAP | 122 egg/ovum |
| *Triturus cristatus* | Great Crested Newt | [redacted] | Arrow Valley Park, Pond 78 | 26/04/1998 | BC2 ECH2,4 WCA5, NERC s.41, Worcs BAP | 2 Adults |
| *Triturus cristatus* | Great Crested Newt | [redacted] | Arrow Valley Park, Pond 78 | 26/04/1998 | BC2 ECH2,4 WCA5, NERC s.41, Worcs BAP | 17 Adults |
| *Triturus cristatus* | Great Crested Newt | [redacted] | Winyates, Pond 39 | 31/05/1999 | BC2 ECH2,4 WCA5, NERC s.41, Worcs BAP | 22 egg/ovum |

## Appendix 3: Results from Bat Survey 1

## Appendix 4: Results from Bat Survey 2

## Appendix 5: Results from water vole survey Stream A

# WATER VOLE SURVEY FORM

**BACKGROUND INFORMATION**

Site name/river: WINYATES GREEN

Site number: A | 10km square: | Grid ref: SP08667 8

County: WORCESTERSHIRE | Water Authority:

Recorder: KERRY KILSHAW | Date: 20/8/2010

**HABITAT INFORMATION (mark features on map)**

Survey distance: 0.31 km

**Habitat**
- [X] Ditch
- [ ] Dyke
- [ ] Gravel pit
- [ ] Pond
- [ ] Lowland lake
- [ ] Upland loch
- [ ] Reservoir
- [ ] Running water
- [ ] Marsh/bog
- [ ] Canal

**Shore/bank**
- [ ] Boulders
- [ ] Stones
- [X] Gravel
- [ ] Sand
- [X] Silt
- [X] Earth
- [ ] Rock cliffs
- [ ] Earth cliffs
- [ ] Canalized
- [ ] Poached
- [ ] Reinforced (man-made)

**Bordering land use**
- [ ] Upland grass
- [ ] Permanent/temporary grass
- [X] Mixed broadleaf woodland
- [ ] Conifer wood
- [ ] Peat bog
- [ ] Arable crop
- [ ] Salt marsh
- [X] Urban/industrial
- [ ] Park/garden
- [ ] Heath
- [ ] Fen
- [X] Cattle/grazing
- [X] Bank fenced?

**Vegetation (DAFORN)**
- [A] Bankside trees
- [N] Bushes
- [F] Herbs
- [N] Submerged weed
- [R] Reeds/sedges
- [N] Tall grass
- [R] Short grass

**Disturbance:**

**Bank profile**
- [ ] Flat < 10°
- [X] Shallow < 45°
- [ ] Steep > 45°
- [ ] Vertical/undercut

**Depth**
- [X] < 0.5m
- [ ] 0.5–1m
- [ ] 1–2m
- [ ] > 2m

**Width**
- [ ] 1m
- [X] 1–2m
- [ ] 2–5m
- [ ] 5–10m
- [ ] 10–20m
- [ ] 20–40m
- [ ] > 40m

**Current**
- [X] Slow
- [ ] Rapid
- [ ] Fast
- [ ] Sluggish
- [ ] Static

**WILDLIFE INFORMATION**

**Water voles**
- [0] Sightings (count)
- [0] Latrines (count)
- [0] Burrows (count)
- [0] Footprints
- [0] Pathway in vegetation
- [0] Feeding remains
- [0] Cropped grass around tunnel entrance

**Rat**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Otter**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

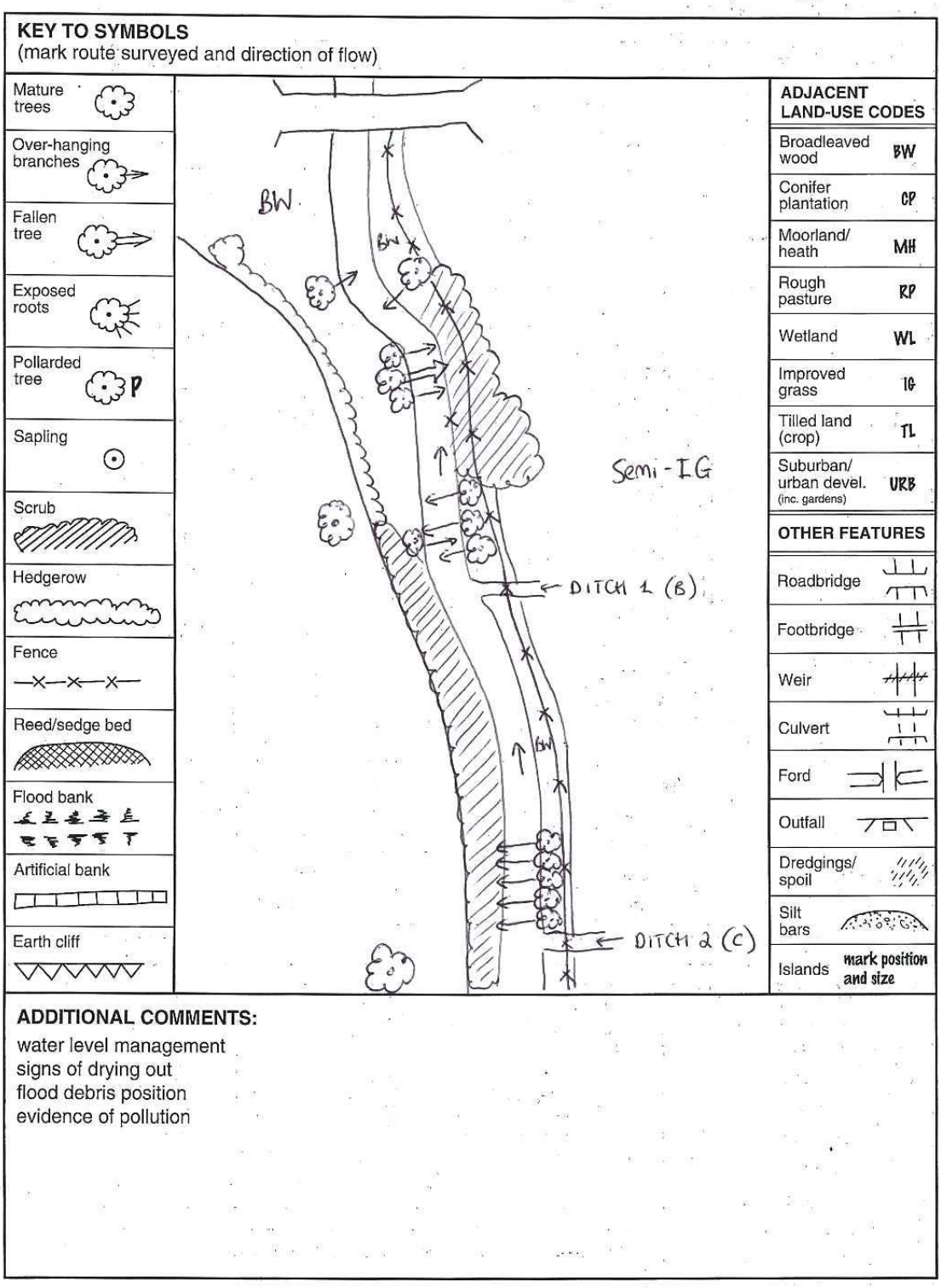
**Mink**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Other wildlife**
- [0] Kingfisher
- [0] Heron
- [0] Coot
- [0] Waterfowl
- [0] Moorhen
- [0] Dipper

**Identified plants from feeding remains:**
NONE

## Appendix 6: Results from Stream A Map

SKETCH OF SITE – vole activity indicated (if any)



## Appendix 7: Results from Stream B

# WATER VOLE SURVEY FORM

**BACKGROUND INFORMATION**

Site name/river: WYNYATES GREEN

Site number: DITCH 1 (B) 10km square: Grid ref: SP086678

County: WORCESTERSHIRE Water Authority:

Recorder: KERRY KILSHAW Date: 20/8/2010

**HABITAT INFORMATION (mark features on map)**

Survey distance: 0.017 km

**Habitat**
- [X] Ditch
- [ ] Dyke
- [ ] Gravel pit
- [ ] Pond
- [ ] Lowland lake
- [ ] Upland loch
- [ ] Reservoir
- [ ] Running water
- [ ] Marsh/bog
- [ ] Canal

**Shore/bank**
- [ ] Boulders
- [ ] Stones
- [X] Gravel
- [ ] Sand
- [X] Silt
- [X] Earth
- [ ] Rock cliffs
- [ ] Earth cliffs
- [ ] Canalized
- [X] Poached
- [ ] Reinforced (man-made)

**Bordering land use**
- [ ] Upland grass
- [ ] Permanent/temporary grass
- [ ] Mixed broadleaf woodland
- [ ] Conifer wood
- [ ] Peat bog
- [ ] Arable crop
- [ ] Salt marsh
- [ ] Urban/industrial
- [ ] Park/garden
- [ ] Heath
- [ ] Fen
- [X] Cattle/grazing
- [ ] Bank fenced?

**Vegetation (DAFORN)**
- [A] Bankside trees
- [A] Bushes
- [O] Herbs
- [N] Submerged weed
- [O] Reeds/sedges
- [N] Tall grass
- [R] Short grass

**Disturbance:** heavy cattle disturbance

**Bank profile**
- [ ] Flat < 10°
- [X] Shallow < 45°
- [ ] Steep > 45°
- [ ] Vertical/undercut

**Depth**
- [X] < 0.5m
- [ ] 0.5–1m
- [ ] 1–2m
- [ ] > 2m

**Width**
- [ ] 5–10m
- [X] 1m
- [ ] 10–20m
- [ ] 1–2m
- [ ] 20–40m
- [ ] 2–5m
- [ ] > 40m

**Current**
- [X] Slow
- [ ] Rapid
- [ ] Sluggish
- [ ] Fast
- [ ] Static

**WILDLIFE INFORMATION**

**Water voles**
- [6] Sightings (count)
- [0] Latrines (count)
- [0] Burrows (count)
- [0] Footprints
- [0] Pathway in vegetation
- [0] Feeding remains
- [0] Cropped grass around tunnel entrance

**Rat**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Otter**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Mink**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Other wildlife**
- [0] Kingfisher
- [0] Heron
- [0] Coot
- [0] Waterfowl
- [0] Moorhen
- [0] Dipper

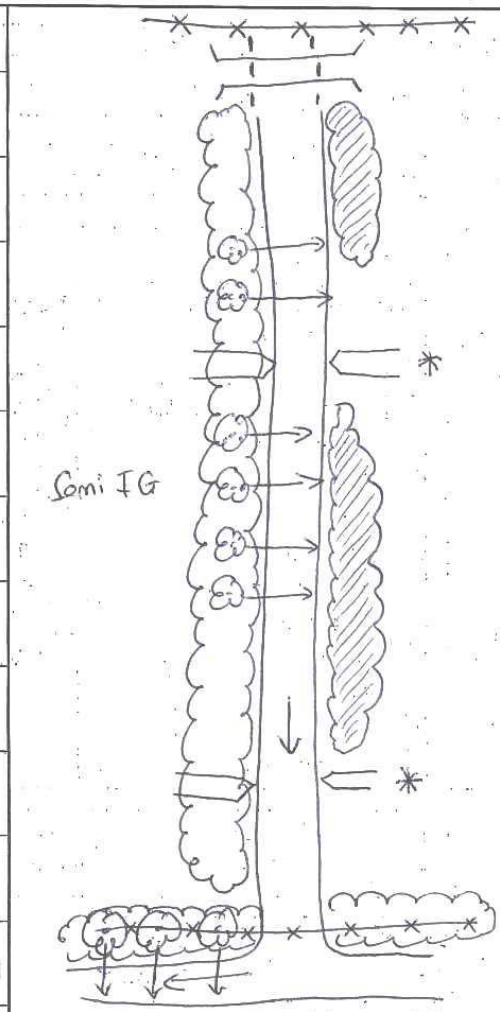
**Identified plants from feeding remains:** NONE

## Appendix 8: Results from Stream B Map

SKETCH OF SITE – vole activity indicated (if any)

**KEY TO SYMBOLS**
(mark route surveyed and direction of flow)

- Mature trees
- Over-hanging branches
- Fallen tree
- Exposed roots
- Pollarded tree P
- Sapling
- Scrub
- Hedgerow
- Fence
- Reed/sedge bed
- Flood bank
- Artificial bank
- Earth cliff




**ADJACENT LAND-USE CODES**

| | |
|---|---|
| Broadleaved wood | BW |
| Conifer plantation | CP |
| Moorland/ heath | MH |
| Rough pasture | RP |
| Wetland | WL |
| Improved grass | IG |
| Tilled land (crop) | TL |
| Suburban/ urban devel. (inc. gardens) | URB |

**OTHER FEATURES**

- Roadbridge
- Footbridge
- Weir
- Culvert
- Ford
- Outfall
- Dredgings/ spoil
- Silt bars
- Islands — mark position and size

**ADDITIONAL COMMENTS:**

water level management
signs of drying out
flood debris position
evidence of pollution

* Cattle crossing point, heavy disturbance

## Appendix 9: Results from Stream C

# WATER VOLE SURVEY FORM

**BACKGROUND INFORMATION**

Site name/river: WYNYATES GREEN

Site number: DITCH 2 (C) | 10km square: | Grid ref: SP086678

County: WORCESTERSHIRE | Water Authority:

Recorder: KERRY KILSHAW | Date: 20/8/2010

**HABITAT INFORMATION (mark features on map)**

Survey distance: 0.24 km

**Habitat**
- [X] Ditch
- [ ] Dyke
- [ ] Gravel pit
- [ ] Pond
- [ ] Lowland lake
- [ ] Upland loch
- [ ] Reservoir
- [ ] Running water
- [ ] Marsh/bog
- [ ] Canal

**Shore/bank**
- [ ] Boulders
- [ ] Stones
- [X] Gravel
- [ ] Sand
- [X] Silt
- [X] Earth
- [ ] Rock cliffs
- [X] Earth cliffs
- [ ] Canalized
- [X] Poached
- [ ] Reinforced (man-made)

**Bordering land use**
- [ ] Upland grass
- [ ] Permanent/temporary grass
- [ ] Mixed broadleaf woodland
- [ ] Conifer wood
- [ ] Peat bog
- [ ] Arable crop
- [ ] Salt marsh
- [ ] Urban/industrial
- [ ] Park/garden
- [ ] Heath
- [ ] Fen
- [X] Cattle/grazing
- [ ] Bank fenced?

**Vegetation (DAFORN)**
- [A] Bankside trees
- [–] Bushes
- [0] Herbs
- [N] Submerged weed
- [N] Reeds/sedges
- [N] Tall grass
- [0] Short grass

**Disturbance:** Cattle disturbance in many places

**Bank profile**
- [ ] Flat < 10°
- [X] Shallow < 45°
- [X] Steep > 45°
- [ ] Vertical/undercut

**Depth**
- [X] < 0.5m
- [ ] 0.5–1m
- [ ] 1–2m
- [ ] > 2m

**Width**
- [ ] 1m
- [X] 1–2m
- [X] 2–5m
- [ ] 5–10m
- [ ] 10–20m
- [ ] 20–40m
- [ ] > 40m

**Current**
- [ ] Rapid
- [ ] Fast
- [X] Slow
- [ ] Sluggish
- [ ] Static

**WILDLIFE INFORMATION**

**Water voles**
- [0] Sightings (count)
- [0] Latrines (count)
- [0] Burrows (count)
- [0] Footprints
- [0] Pathway in vegetation
- [0] Feeding remains
- [0] Cropped grass around tunnel entrance

**Rat**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Otter**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

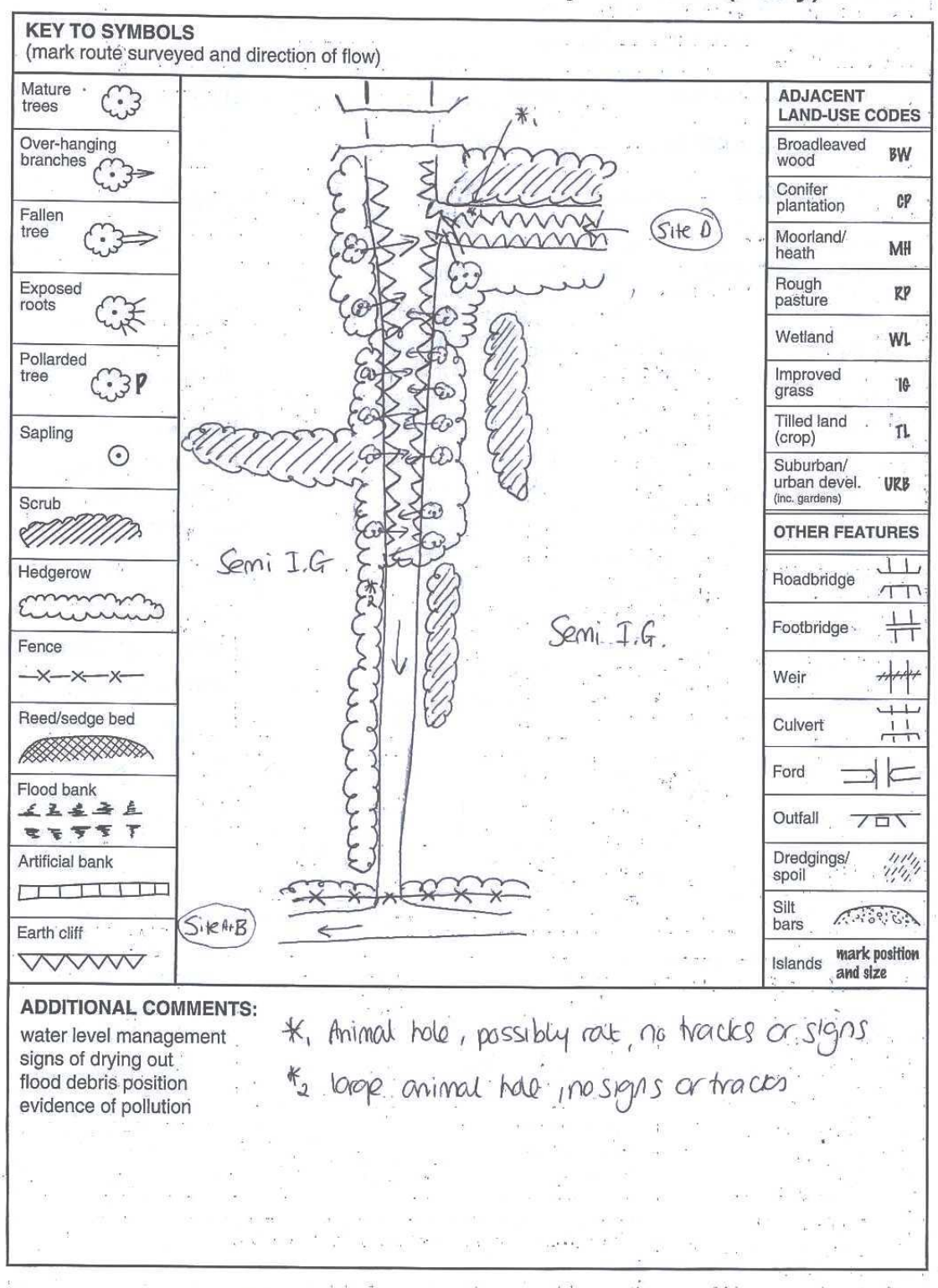
**Mink**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Other wildlife**
- [0] Kingfisher
- [0] Heron
- [0] Coot
- [0] Waterfowl
- [0] Moorhen
- [0] Dipper

**Identified plants from feeding remains:**

## Appendix 10: Results from Stream C Map

SKETCH OF SITE – vole activity indicated (if any)



## Appendix 11: Results from Stream D

# WATER VOLE SURVEY FORM

**BACKGROUND INFORMATION**

Site name/river: WINYATES GREEN

Site number: D (SINK) | 10km square: | Grid ref: SPO 86678

County: WORCESTERSHIRE | Water Authority:

Recorder: TERRY KIGHAW | Date: 20/8/2010

**HABITAT INFORMATION (mark features on map)**

Survey distance: 0.08 km

**Habitat**
- [X] Ditch
- [ ] Dyke
- [ ] Gravel pit
- [ ] Pond
- [ ] Lowland lake
- [ ] Upland loch
- [ ] Reservoir
- [ ] Running water
- [ ] Marsh/bog
- [ ] Canal

**Shore/bank**
- [ ] Boulders
- [ ] Stones
- [X] Gravel
- [ ] Sand
- [X] Silt
- [X] Earth
- [ ] Rock cliffs
- [X] Earth cliffs
- [ ] Canalized
- [X] Poached
- [ ] Reinforced (man-made)

**Bordering land use**
- [ ] Upland grass
- [ ] Permanent/temporary grass
- [ ] Mixed broadleaf woodland
- [ ] Conifer wood
- [ ] Peat bog
- [ ] Arable crop
- [ ] Salt marsh
- [ ] Urban/industrial
- [ ] Park/garden
- [ ] Heath
- [ ] Fen
- [X] Cattle/grazing
- [ ] Bank fenced?

**Vegetation (DAFORN)**
- [A] Bankside trees
- [A] Bushes
- [O] Herbs
- [N] Submerged weed
- [O] Reeds/sedges
- [N] Tall grass
- [N] Short grass

**Disturbance:** Regular disturbance by cattle near culverts

**Bank profile**
- [ ] Flat < 10°
- [ ] Shallow < 45°
- [X] Steep > 45°
- [ ] Vertical/undercut

**Depth**
- [X] < 0.5m
- [ ] 0.5–1m
- [ ] 1–2m
- [ ] > 2m

**Width**
- [ ] 5–10m
- [ ] 1m
- [ ] 10–20m
- [ ] 1–2m
- [ ] 20–40m
- [X] 2–5m
- [ ] > 40m

**Current**
- [X] Slow
- [ ] Rapid
- [ ] Sluggish
- [ ] Fast
- [ ] Static

**WILDLIFE INFORMATION**

**Water voles**
- [0] Sightings (count)
- [0] Latrines (count)
- [0] Burrows (count)
- [0] Footprints
- [0] Pathway in vegetation
- [0] Feeding remains
- [0] Cropped grass around tunnel entrance

**Rat**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

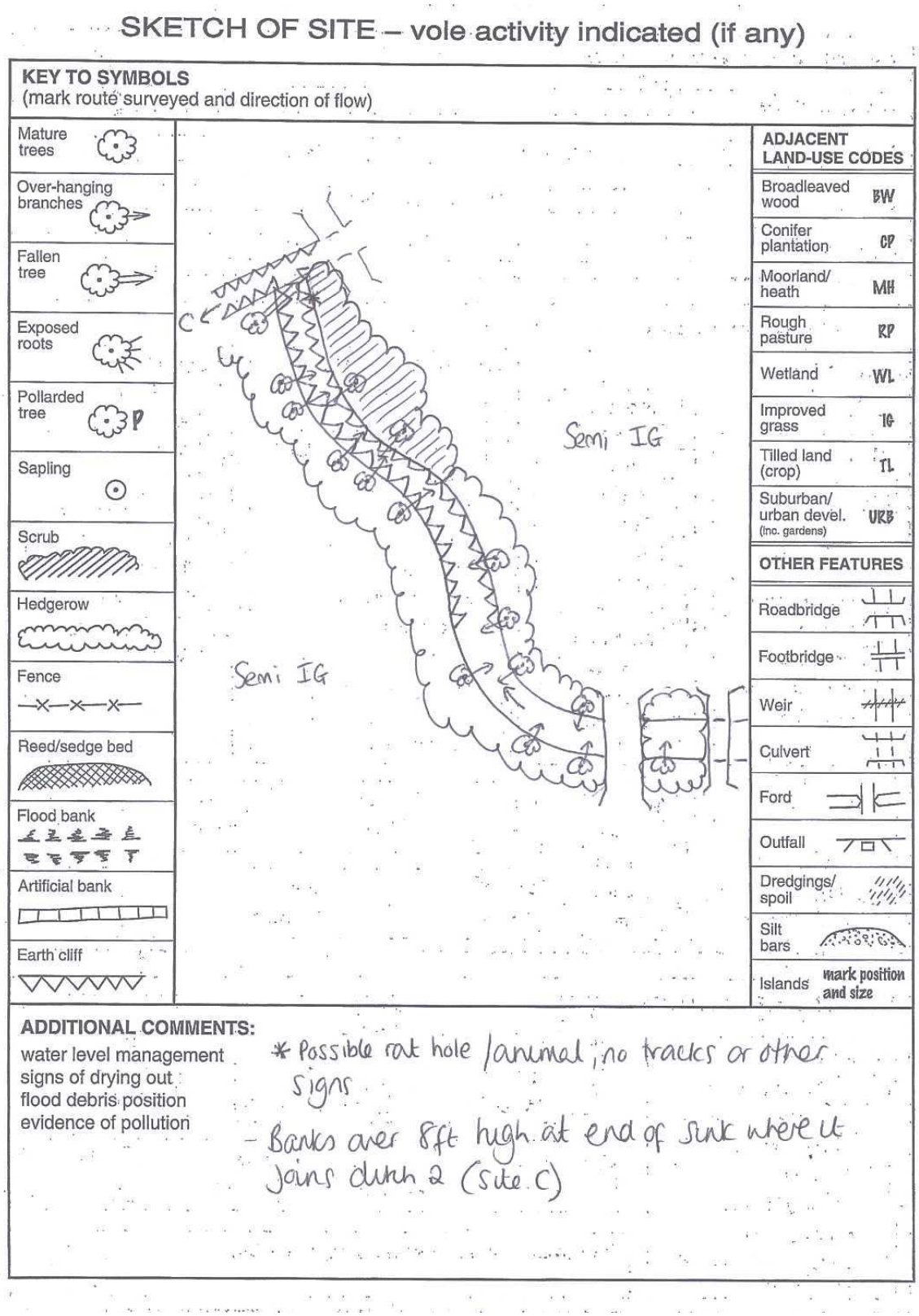
**Otter**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Mink**
- [0] Sightings
- [0] Droppings
- [0] Footprints/runs

**Other wildlife**
- [0] Kingfisher
- [0] Heron
- [0] Coot
- [0] Waterfowl
- [0] Moorhen
- [0] Dipper

**Identified plants from feeding remains:** NONE

## Appendix 12: Results from Stream D Map



## Appendix 13: Site Photographs

**Plate 1: Stream A - showing canopy cover and bare banks**

**Plate 2: Stream A**

**Plate 3: Stream B showing more open ground at the western end**

**Plate 4: Stream B showing the culvert at the eastern end**

**Plate 5: Stream C- culvert at stream entrance**

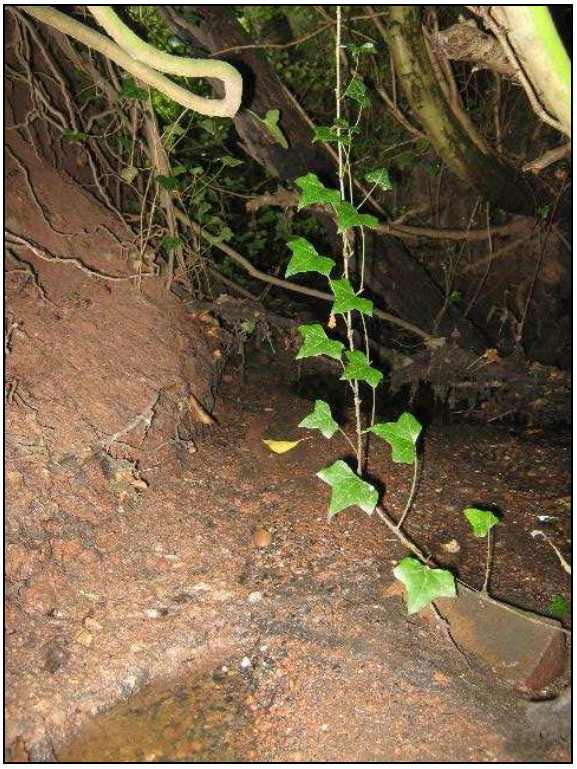


**Plate 6: Stream C –heavily overgrown sections of the stream**

**Plate 7: Stream C – Showing more open section western edge of stream,**

**Plate 8: Stream C – heavily disturbed by cattle open on one side with low banks**

**Plate 9: Stream D – Showing heavily canopied culvert at eastern end**

**Plate 10: Stream D – Showing grassy area between culvert and main body of stream**