

# PRELIMINARY ECOLOGICAL APPRAISAL

**Land East of Europa Way (GT15)  
Warwickshire**

**Final report  
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**Survey and reporting:**

Becky May MA Hons (Cantab) MCIEEM

**Checked by:**

Lisa Kerslake BSc MSc CEcol CEnv FCIEEM

**Client:**

'BTPC' via Link Support Services (UK) Ltd

© Swift Ecology Ltd  
Rose Cottage  
Market Square  
Kineton  
Warwick  
CV35 0LP

Tel 01926 642541

Email [swifteco@swiftecology.co.uk](mailto:swifteco@swiftecology.co.uk)

Website [www.swiftecology.co.uk](http://www.swiftecology.co.uk)

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## SUMMARY

- A Preliminary Ecological Appraisal was carried out on a small area of land immediately to the east of Europa Way, between Warwick and Leamington Spa, Warwickshire, in April 2014.
- The site is on Warwick District Council's preferred list of potential Gypsy and Traveller Site Allocations. The survey was commissioned in connection with the potential future development of the site for the purposes of creating a Gypsy and/or Traveller Site with up to five pitches (ETC) and associated access. The exact layout of any proposed development is not yet known (which could affect pitch numbers), although it has been estimated by Warwick District Council that approximately one third of the land would be impacted.
- The site surveyed measured approximately 2 ha and comprised mixed plantation woodland, a watercourse (Tach Brook), linear scrub and scattered scrub. Habitats and plant species present on the site are common and widespread locally, regionally and nationally.
- The site is designated as part of the non-statutory Ecosite 08/36, Marsh Along Tach Brook and the Tach Brook forms part of the River Avon LWS, as one of its tributaries.
- Recommendations are made to design the development in such a way as to include a no-disturbance buffer zone of at least 3 m from the western bank of Tach Brook in order to avoid direct impacts on the watercourse and to minimise removal of existing trees.
- The survey found evidence of use of the site by badgers, in the form of an active sett, latrines and paths. An updating badger survey is recommended prior to further consideration of the site in order to inform the site layout and allow an assessment of potential impacts of the development on this species.
- The survey also identified the possibility of water voles using the watercourse due to the presence of potential burrows. Further survey for water voles at an appropriate time of year is recommended prior to further consideration of the site in order to assess the potential impacts of the development on this species. Further survey for white-clawed crayfish may also be required along the watercourse prior to further consideration of the site, if it will be directly affected by the proposed works.
- The site also has some suitability to support nesting birds, roosting bats in the mature trees, great crested newts, reptiles and dormice and some precautions will be required for these species.

- Should the developer wish to incorporate enhancement elements into the project, suggestions have been made regarding appropriate measures for this development based on what species occur or are likely to occur on site.

# 1 INTRODUCTION

## 1.1 *Background*

A Preliminary Ecological Appraisal comprising a Phase 1 Habitat Survey, desk study and protected species assessment was undertaken of an area of land to the east of Europa Way, which links Leamington Spa to the Banbury Road, at approximate OS grid reference SP301629. The survey was undertaken on 01 April 2014.

The survey was commissioned in connection with a potential development which will consist of the creation of four pitches for use by gypsies and travellers and associated access. The layout of the development is not known, but it is estimated that approximately one third of the site would be affected by the proposed development, including access works onto Europa Way at the western edge of the site. Due to the steeply sloping nature of most of the site, a certain amount of releveling works are likely to be necessary in order to facilitate vehicle and pedestrian access as well as providing level terrain for caravans and mobile homes. It is therefore likely that there will be an unknown but possibly significant amount of soil disturbance and loss of trees during these releveling works.

## 1.2 *Ecological Context*

The site lies immediately to the east of Europa Way, which is a busy road that runs south from Leamington Spa, linking up with the Banbury Road. The site mostly comprises mixed plantation woodland with patches of scrub and tall herb vegetation. The Tach Brook watercourse, which forms part of the River Avon Local Wildlife Site, forms the site's eastern boundary. The site is bordered to the north, east and south by intensively farmed arable fields with some hedgerow field boundaries, and additional arable fields lie on the western side of Europa Way. Further afield the site is surrounded by the urban settlements of Leamington Spa and Warwick, which are separated by open farmland, mainly arable, with some hedges and mature trees, and the Nursery Wood complex, which lies approximately 850 m to the west of the site. A number of large waterbodies lie to the north of the site, the closest of which is approximately 250 m away. The River Avon lies approximately 1.8 km to the west of the site, which is hydrologically linked to the site via the Tach Brook tributary.

## 2 METHODS

### 2.1 Background Data Search

A background data search was undertaken for designated sites and protected species records within 1 km of the site from the Warwickshire Biological Records Centre (WBRC).

### 2.2 Preliminary Ecological Appraisal

#### 2.2.1 General

A Preliminary Ecological Appraisal, comprising a Phase 1 Habitat Survey and protected species assessment was undertaken, following standard methods as described in the Guidelines for Preliminary Ecological Appraisal (IEEM, 2012), and the Phase 1 Habitat Survey Methodology (JNCC, 1988 revised 2003), as modified by the Institute of Environmental Assessment's Guidelines for Baseline Ecological Assessment (IEA, 1995).

The Phase 1 Habitat Survey comprised:

- habitat descriptions for each separate habitat type;
- target notes to identify particular areas of interest or concern; and
- plant species lists, if appropriate.

The suitability of habitats for any protected animal species was assessed at the same time as the Phase 1 Habitat Survey and any incidental evidence of such species was recorded if encountered. Species that might be expected to be present in the geographic location include bats, badger *Meles meles*, hazel dormouse *Muscardinus avellanarius*, water vole *Arvicola terrestris*, otter *Lutra lutra*, nesting birds, great crested newt *Triturus cristatus* and reptiles.

All information was mapped and recorded as target notes as appropriate.

Weather conditions during the site visit were good, with no rain and limited cloud cover. Visibility was good and the air temperature was 15°C.

#### 2.2.2 Badger

Habitat was assessed for its suitability for badger foraging and sett digging. Any incidental signs of badgers, such as setts, latrines, foraging signs, or footprints, were recorded if they were encountered. A full badger survey was not undertaken.

#### 2.2.3 Bats

There are no buildings on site. The site was assessed for its suitability for roosting and foraging bats.

#### **2.2.4 Dormouse**

Habitat was assessed for its suitability for dormouse based on vegetation structure, connectivity and species composition. A full dormouse survey was not undertaken.

#### **2.2.5 Water vole and otter**

Water bodies were assessed for their suitability to support water vole and otter, and were briefly checked for signs of use by these species including burrows, latrines, spraints, feeding remains and footprints. A full water otter and vole survey was not undertaken.

#### **2.2.6 White-clawed crayfish**

Water bodies were assessed for their suitability to support white-clawed crayfish, and banks were briefly checked for signs of use by this species in the form of burrows. A full white-clawed crayfish survey was not undertaken.

#### **2.2.7 Great crested newt**

Great crested newts use terrestrial habitat within 500 m of breeding ponds; such habitat is also protected. Terrestrial habitats on site were therefore assessed for their potential to support the species, based on factors including vegetation structure and composition, the availability of shelter and foraging resources. The proximity of ponds and intervening habitats are also an important factor in determining the likelihood of this species being present on site.

#### **2.2.8 Reptiles**

Terrestrial habitats on site were assessed for their potential to support common reptile species, based on factors including vegetation structure and composition, and the availability of shelter and foraging resources.

#### **2.2.9 Nesting birds**

Habitats on site were assessed for their suitability for breeding birds, including trees, scrub and grassland.

#### **2.2.10 Other species**

General habitat suitability and incidental sightings of other animal species, including UK and Local Biodiversity Action Plan species, were noted.

### **2.3 Constraints**

April is a reasonable month for Phase 1 survey, but is not an optimal time of year because many plants may not be in evidence and may be missed. Also, a single visit to a site at any time of year will only identify a proportion of the species present. Therefore the descriptions given in Section 3.3 should not be considered to be complete.

### 3 RESULTS

#### 3.1 General

The site is a relatively small plot of land (approximately 2 ha), comprising plantation woodland, linear and scattered scrub and a watercourse. It is bounded by Tach Brook to the east, a timber post and rail fence fronted by linear scrub to the south and west and adjoining woodland to the north. The land rises steeply towards the west of the site and piles of brash and deadwood have been stacked up throughout the woodland.

Evidence of badger activity and nesting birds was found on the site, and there is a high likelihood that roosting bats are present in some of the more mature trees. Possible water vole burrows were found along the banks of Tach Brook, but this would need to be confirmed through further dedicated survey work. It is also possible, although unlikely, that the stream is used occasionally by otter. The site also has the potential to support reptiles and great crested newt and the presence of dormouse and white-clawed crayfish cannot be ruled out.

The main habitats and the results of the protected species assessment are described below, and are illustrated in *Figure 1*, Section 8.

#### 3.2 Background Data Search

Data were obtained from the Warwickshire Biological Records Centre (WBRC).

Warwickshire County Council is currently reviewing its nature conservation site designation system and will be identifying Local Wildlife Sites (LWS); candidate sites are denoted as pLWS in the table below.

The site is designated as part of the non-statutory Ecosite 08/36, Marsh Along Tach Brook and the Tach Brook forms part of the River Avon LWS, as one of its tributaries. There are two additional non-statutory designated sites lying within approximately 1 km of the site. These are summarised in *Table 1*. Full details are given in *Appendix 1*.

*Table 1: Non-statutory sites within 1 km of the study site*

Site name	Description
09/26 Greys Mallory	Ecosite/pLWS
120/26 Warwick Castle Park	Ecosite/certain parts are also LWS

Relevant protected and notable species records are summarised in *Table 2* below and all records are given in full in *Appendix 1*. Records prior to 1980 are not included in the table. The desk study also provided records of other amphibians, plants, and invertebrates.

*Table 2: Protected and notable species records within 1 km of the study site*



Date	Common Name	Scientific Name	Grid reference	Source
2005	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	SP299637	WBRC
2005	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	SP300636	WBRC
2005	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	SP300636	WBRC
2005	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	SP300636	WBRC
2005	Noctule	<i>Nyctalus noctula</i>	SP301636	WBRC
2008	Unidentified bat	-	SP299617	WBRC
2008	Unidentified bat	-	SP301615	WBRC
2003	Grass snake	<i>Natrix natrix</i>	SP299632	WART
2003	Grass snake	<i>Natrix natrix</i>	SP299632	WART
2008	Otter	<i>Lutra lutra</i>	SP295634	WBRC
2003	Water vole	<i>Arvicola amphibius</i>	SP300631	WWT
-	Badger	<i>Meles meles</i>	-	WBRC

Records for barn owl *Tyto alba*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus* were also provided, as well as records of three rare or notable plant species: loose silky bent *Apera spica-venti*, mousetail *Myosurus minimus* and small-flowered buttercup *Ranunculus parviflorus*.

An absence of records does not mean that a species is not present, merely that it has not been recorded. Some species records are not obtainable from the sources utilised and there may be further undetected records for such species on the study site or in the local area.

### 3.3 Habitats

#### 3.3.1 Mixed plantation woodland

The majority of the site is occupied by a fairly young mixed plantation woodland with occasional mature oak *Quercus robur* trees that pre-date the plantation. The canopy mostly comprises lines of planted tall, semi-mature oak trees, but includes other species such as ash *Fraxinus excelsior*, larch *Larix decidua*, white poplar *Populus alba*, common lime *Tilia x europea*, silver birch *Betulus pendula*, hawthorn *Crataegus monogyna*, cypress *Cupressus* sp., beech *Fagus sylvatica* and hornbeam *Carpinus betulus*. The understorey mostly comprises hawthorn and blackthorn *Prunus spinosa*, with occasional elder *Sambucus nigra* and locally frequent spindle *Euonymus europaeus*, field maple *Acer campestre* and hazel *Corylus avellana* to the west of the site.



*Typical area of plantation woodland with sparse ground flora.*

Ground flora throughout the majority of the site was sparse, and dominated by bramble *Rubus fruticosus* agg. and wood avens *Geum urbanum*, with frequent meadow-grass *Poa* sp and occasional dandelion *Taraxacum officinalis*, common nettle *Urtica dioica*, fescue sp., Yorkshire fog *Holcus lanatus*, creeping buttercup *Ranunculus repens*, dock *Rumex* sp., white dead nettle *Lamium album*, teasel *Dipsacum fullonum*, speedwell *Veronica* sp. and cleavers *Galium aparine*. Additional species recorded towards the base of the slope at the east of the site, close to the Tach Brook, include male fern *Dryopteris filix-mas*, ground ivy *Glechoma hederacea*, lords and ladies *Arum maculatum*, garlic mustard *Alliaria petiolata* and ivy *Hedera helix*. Separate areas of locally frequent pendulous sedge *Carex pendula*, common nettle and ash saplings were recorded within the woodland and are marked on *Figure 1* as target notes.

The woodland composition changes in the south-east part of the site. Here the canopy is dominated by ash and poplar and includes horse chestnut *Aesculus hippocastanum*. The understorey is dominated by blackthorn. Ground flora is dominated by poa sp. and wood avens, and also includes frequent hogweed *Heracleum sphondylium*, cow parsley *Anthriscus sylvestris*, white dead nettle and lesser celandine *Ranunculus ficaria*. Other species recorded here were occasional cowslip *Primula veris* and herb robert *Geranium robertianum*. There is a small marshy area in the south-east corner of the site, which is dominated by sedge *Carex* sp, dock sp,, common nettle and lesser celandine.



*South-east compartment with more dense ground flora.*

There were no ancient woodland indicator species apparent.

### **3.3.2 Linear scrub**

There is a thick belt of blackthorn and hawthorn linear scrub that runs along the field boundary to south of site. The scrub is located on top of a steep bank, with the remnants of an old stone wall visible at the base of the slope towards the west of the site.

A wide belt of linear scrub also lines the Europa Way road verge, immediately to the west of the woodland. This area is dominated by hawthorn, but other species recorded include bramble and young planted specimens of oak, apple *Malus* sp., cotoneaster *Cotoneaster* sp., spindle, hazel, field maple and wild cherry *Prunus avium*.

Linear blackthorn and hawthorn scrub also runs along the western edge of Tach Brook, and includes within it occasional mature willow *Salix* sp. and ash trees. A short stretch of parallel dense blackthorn scrub exists along part of the brook towards the centre of the site, some of which has been cut down and stored as a line of brash at the base of the scrub vegetation.



*Linear hawthorn and blackthorn scrub, southern boundary.*

### 3.3.3 Scattered scrub

There are a few patches of bramble scrub within the woodland, mostly towards the west of the site.



*Scattered bramble scrub.*

### 3.3.4 Watercourse

A stream, the Tach Brook, which has a silt bed and steep, earth banks, runs along the site's eastern boundary from south to north. It is heavily shaded by blackthorn and hawthorn scrub and a line of mature willow trees, and the banks are either bare or vegetated mainly with the woodland ground flora species with additional

meadowsweet *Filipendula ulmaria*, bittersweet *Solanum dulcamara* and willowherb *Epilobium* sp. Aquatic vegetation is absent apart from a few small patches of pondweed *Potamogeton* sp.

The water quality is fairly turbid. A riffle and wide, shaded pool is located towards the north of the site, as well as a dry meander bed and nettle-dominated island. Debris from fallen branches blocks the flow of the water at certain points.



*Typical section of stream.*



*Riffle and pool.*

In addition, a short stretch of wet ditch runs along part of the southern boundary, leading into the Tach Brook. Species recorded along the ditch include broad-leaved dock *Rumex obtusifolius*, floating sweet-grass *Glyceria fluitans*, sedge sp and common nettle, with locally frequent reed canary-grass *Phalaris arundinacea* at the junction where the ditch meets the stream. The water level was very low within the ditch at the time of survey.



*Wet ditch, south-east of site.*

### **3.4 Protected Animal Species**

#### **3.4.1 Badger**

The site is suitable for sett building and for use by badgers for foraging, and a number of signs of badger activity were recorded within the site:

An active sett entrance was recorded within the belt of linear scrub along the site's southern boundary, close to the entrance gate. There was fresh spoil outside the hole and a badger hair was found at the entrance.



*Active badger sett.*

*Disused badger sett.*

A number of disused mammal burrows that could be old badger sett entrances were recorded along the southern boundary towards the south-east corner of the site. The holes did not appear to be in recent use and were slightly smaller than would be typical for badger, but it is often difficult to confirm the origin of unused holes.

An actively used badger latrine with fresh dung was found in the south-east of the site, along the site boundary. A well-used mammal track was recorded running along the brook in the south-east of the site and leaving the site at the south-east corner. A number of clear badger prints were visible in the wet mud on this track, along with deer prints.

A second badger latrine was recorded to the west of the site, with evidence of badger foraging nearby. A very well-used mammal track was recorded running along the western edge of the woodland, adjacent to the latrine and foraging area, suggesting it is in frequent use by the local badger population.

All badger signs are marked as target notes on *Figure 1*. No other evidence of badgers (e.g. setts, latrines, foraging signs, tracks or footprints) was noted but a full badger survey was not undertaken. There are four badger records within 1 km of the site.

### **3.4.2 Bats**

There are no buildings on site. The majority of the wooded area comprises semi-mature or immature trees, which are unsuitable for bat roosting. However, there are a few larger trees that were briefly assessed for their bat roosting potential, including one tree just outside the site boundary to the south; these are listed in the table below and marked as target notes on *Figure 1*. Use by roosting bats of most of these trees cannot be ruled out. The site is likely to be used by foraging or commuting bats. There are records of two bat species within 1 km of the site; common pipistrelle and noctule.

*Table 3: Mature Tree Assessment for Bat Roosting Potential*

Target note	Species	Comment
5	Willow sp.	Mature willow tree outside site boundary to the south with numerous bat roosting opportunities seen within split limbs and beneath lifted bark.
8	Willow sp.	Mature coppice willow. No obvious bat roosting potential noted.
9	Ash	Mature ash adjacent to the stream with areas of peeling bark that could be utilised by small number of roosting bats.
11	Oak	Mature oak adjacent to the stream with dense ivy cover that could possibly support roosting bats or may obscure additional bat roosting features.
13	Oak	Mature oak in the centre of the woodland with many split limbs and broken branches creating numerous roosting opportunities for bats.

### 3.4.3 Dormouse

The site is suitable for dormice. There are no dormouse records within 1 km of the site and dormice are not known to be present in this part of the county. It is therefore relatively unlikely that dormice are present, but it cannot be ruled out on the basis of this survey.

### 3.4.4 Water vole and otter

The stream is unlikely to be suitable for use by otter due to its small size and lack of suitable locations for holts, although it is possible that individual animals may use it to pass between larger water courses, especially as this stream links up to the River Avon, which has a known otter population, and as there is an otter record from 2008 at the point where Tach Brook joins the River Avon. The stream has some limited suitability for water vole; however, it is heavily shaded and there is little suitable vegetation on the banks, with aquatic vegetation almost absent. A number of burrows were noted along the eastern bank of the stream, but no evidence of water vole activity was found and therefore it is not certain what species has caused the burrows. There is one record of water vole within 1 km of the site, which is located approximately 500 m north-west of the site at a pond adjacent to Tach Brook.



*Examples of possible water vole burrows along eastern bank of brook.*

### 3.4.5 White-clawed crayfish

The stream is considered to provide sub-optimal habitat for white-clawed crayfish due to its silty substrate, poor water clarity and very few aquatic plants. However,

the presence of undermined, overhanging earth banks and a small riffle zone provide the potential for some crayfish refugia, which means the possibility of crayfish cannot be ruled out. A number of burrows were noted at the water's edge, one of which had the distinctive 'flat' shape of crayfish. However, there is a strong possibility that the burrow may have been created by a non-native crayfish species such as the signal crayfish, which are much better adapted to survive in sub-optimal habitat. There are no white-clawed crayfish records within 1 km of the site and no current white-clawed crayfish are known to exist within the surrounding area.



*Possible crayfish burrows, one on left with 'flat' shape.*

#### **3.4.6 Great crested newt**

The site contains suitable terrestrial habitat for great crested newts, including scrub, woodland and numerous areas of piled-up brash and deadwood on the ground. The likelihood of newts using the site would depend on the presence of a breeding pond or ponds within a reasonable distance (250-500 m or less); there are two large waterbodies located approximately 250 m to the north of the site, which means the presence of great crested newts is possible on site, even though there are no great crested newt records within 1 km of the site.

#### **3.4.7 Reptiles**

The site contains habitat that reptiles may use for foraging and shelter, especially within piled-up areas of brash on the ground; however, much of the site is heavily shaded and not ideal for basking. The presence of a stream and wet ditch may attract occasional grass snakes for foraging purposes. Common reptiles may be present on the site, but any such use is likely to be limited to commuting and occasional foraging along the watercourse and wet ditch.

There two grass snake records and one historical adder record within 1 km of the site.

#### **3.4.8 Nesting birds**

Trees, hedges and scrub are potentially suitable for use by nesting birds and the steep earth banks of the stream could also be used by breeding kingfisher.



*Sheer earth bank on Tach Brook with potential for kingfisher holes.*

Birds exhibiting breeding behaviour (singing and alarm calls) during the site visit included chiffchaff *Phylloscopus collybita*, blue tit *Parus caeruleus* and great tit *Parus major*; these are probably breeding nearby, but not necessarily on the site itself. In addition, skylarks *Alauda arvensis* were heard singing in the adjacent field to the east of the site and are likely to be breeding there. There is a barn owl *Tyto alba* record within 1 km of the site, but the site does not provide suitable nesting or foraging opportunities for this species; therefore it is considered to be absent from the site.

#### **3.4.9 Other species**

The site has the potential to support species listed on the UK Government's Biodiversity Action Plan (BAP), such as hedgehog *Erinaceus europaeus* and possibly polecat *Mustela putorius*. There are four records of hedgehog within 1 km of the site.



## 4 EVALUATION

### 4.1 Habitats

The development will impact on the non-statutory designated ecosite, Marsh Along Tach Brook, and is also likely to impact on the non-statutory designated Local Wildlife Site, Tach Brook. The woodland ecosite area is of local ecological importance, but the Tach Brook is of county importance given its status as part of the River Avon system. The level of impact on both these sites will depend on the extent of ground releveling works required and the location and design of the proposed pitches and access arrangements; precautions will be required to prevent significant damage to this site, in particular the watercourse, especially as it is noted that Tach Brook is already failing in its objectives under Water Framework Directive due to high levels of phosphates<sup>1</sup>.

A full botanical survey was not undertaken, and therefore the descriptions given in Section 3.3 should not be considered to be complete. Nevertheless, all plants and habitats present are common and widespread in the UK and it is not expected that any rarities or unusual habitats are present. The woodland plantation is relatively recent, although signs of the pre-existing wooded habitat are visible through occasional mature trees within the canopy and mature willow and ash trees along the watercourse.

It has been estimated by Warwick District Council that a third of the site will be impacted by the proposed development and therefore the majority of the woodland will be retained and will be unaffected by the development; however, some disturbance will be caused by the likely requirement for ground releveling works, the creation of an access road into the site and the creation of up to five pitches. This will necessitate the removal of some trees and shrubs. There is no apparent reason why the watercourse need be directly affected by the proposed development, as the layout could be designed to avoid this area and impose a minimum no-disturbance buffer zone. However, precautions will be required to prevent indirect impacts such as siltation due to increased surface run-off and possible pollution incidents during and after construction.

### 4.2 Protected Animal Species

#### 4.2.1 Badger

The site is actively used by badgers; an active sett, two latrines, at least one well-used track and foraging areas were all identified. It is therefore highly likely that, without mitigation, the proposed development would impact on badgers both during and following development, for example due to increased disturbance from residents and their pets, and the feasibility of this should be addressed prior to further consideration of the site. Precautions will therefore be needed for badgers.

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<sup>1</sup> Information taken from Warwick District Council's Gypsy and Traveller Site Assessments.

#### **4.2.2 Bats**

The site may be used by foraging/commuting bats, but the loss of this small site is unlikely to be significant, particularly if the majority of the woodland can be retained.

There is a possibility that bats may use the more mature trees on the site for roosting. There may therefore be impacts on bats, if present, if any trees are to be removed.

#### **4.2.3 Dormouse**

Dormice are unlikely to be present but cannot be ruled out on the basis of this survey. However, provided the majority of the woodland is not affected, and precautionary working methods are used for tree removal, no impacts are anticipated on this species.

#### **4.2.4 Water vole and otter**

Although the brook provides sub-optimal habitat for water voles, it is possible that the site is used by water voles as potential water vole burrows were noted in the brook's eastern bank and there is a record of water voles along the Tach Brook to the north of the site. The presence or absence of water voles would need to be established through a water vole survey at an appropriate time of year, when the voles are more active (ideally May-September) in order to assess the impact of the proposed development on water voles. It is unlikely that otters actively use the brook within the site, although they may occasionally pass through as the brook adjoins the River Avon and there is a record of otter using the brook to the north of the site, where at the junction of the brook with the River Avon. However, given the mobile nature of otters and the lack of potential holts in the site, it is not considered likely that the development will impact on otters.

#### **4.2.5 White-clawed crayfish**

White-clawed crayfish are unlikely to be present but cannot be ruled out on the basis of this survey. However, provided the watercourse is protected from development with an appropriate no-disturbance buffer zone (see Section 5.1), no impacts are anticipated on this species.

#### **4.2.6 Great crested newt**

The site contains terrestrial habitat that is suitable for great crested newts and there are two large water bodies within 300 m of the site to the north, the closest of which lies approximately 250 m from the site. It is therefore possible that the proposed development will have an impact on this species and precautionary clearance techniques will be required.

#### **4.2.7 Reptiles**

The site contains habitat that is suitable for reptiles; however, the habitat is not optimal for these species and therefore any level of use by these species is likely to be low. Nevertheless, development of or disturbance to this habitat might have a

minor impact upon these species if present and precautions will be needed to prevent harm to reptiles.

#### **4.2.8 Nesting birds**

Breeding birds may use the trees and hedges. The removal of such habitats might have an impact on birds while they are nesting.

#### **4.2.9 Other species**

Small areas of habitat for invertebrates, small mammals, fox, hedgehog and polecat may be lost, so there may be a slight impact on these species, if present, but this is likely to be very minor in the context of other suitable habitat in the vicinity.

## 5 RECOMMENDATIONS

### 5.1 Habitats

It is recommended that the proposed development imposes a no-disturbance buffer zone of at least 3 m from the western bank of Tach Brook in order to avoid direct impacts on this important ecological feature. It is essential that appropriate pollution avoidance measures are adhered throughout the construction period and that sustainable drainage measures are incorporated into the development to avoid impacting on the watercourse post-construction.

The boundary linear scrub belts, where they exist, should be retained if possible and enhanced by appropriate management and, where necessary, gapping-up using appropriate native species (see 5.3).

In order to minimise impacts on the woodland and stream, it is recommended that the proposed pitches and access road are located with sensitivity to minimise removal of trees and should avoid proximity to existing mature trees that pre-date the plantation. The area around the existing entrance gate to the south of the site is a recommended access point into the site as there is already an opening in the canopy at that location.

It is recommended that the woodland areas that remain following development should be brought into an ecologically sensitive management regime in order to offset any loss caused by the development. This is likely to include some canopy thinning to allow the ground flora to flourish, possibly through traditional sustainable woodland practices such as coppicing.

It is recommended that any planting scheme in connection with the development will comprise native or wildlife-attracting species in order to retain and enhance the site's biodiversity.

### 5.2 Protected Animal Species

#### 5.2.1 Badgers

As badgers are mobile creatures that can build new setts overnight, in order to assess delivery of the site in relation to this protected species it is recommended that a further badger survey should be carried out and a suitable mitigation strategy designed where and if possible. If the proposed development proceeds, its layout should incorporate appropriate badger mitigation and be designed to minimise impacts on the badgers' current use of the site. This should include siting pitches away from the locations of identified badger setts and active latrines and ensuring that well-used badger tracks are maintained through the site where possible. If this is not possible, then alternative commuting routes through the site should be made available to badgers.

During development, a no-disturbance zone of at least 20 m from each active sett should be fenced-off, and this fencing should be maintained until development is complete. Use and storage of vehicles and heavy machinery should be avoided within this zone and in the wider vicinity of the setts. Following development, consideration should be given to protective fencing/screening around the setts to minimise disturbance from residents and their pets.

### **5.2.2 Bats**

Should any mature trees with a DBH of greater than 25 cm or with heavy ivy cover need to be felled, these must be inspected for their potential for bat roosting prior to felling.

Should potential for, or evidence of, roosting bats be found, further surveys and a European Protected Species licence may be needed.

### **5.2.3 Dormouse**

Any coppice stools or other trees or shrubs to be removed must be cut to the base over winter, while dormice are in hibernation at or below ground level. Stools and stumps should then be removed between May and September, by which time any dormice will have emerged from hibernation and will not be harmed by stump removal.

### **5.2.4 Water vole and otter**

In order to assess delivery of the site further in relation to water voles, a further water vole survey is recommended at an appropriate time of year when the voles are more active (May-September) in order to identify the presence or absence of this species from the site. The burrows and banks should be inspected for field signs of water voles including droppings, feeding 'lawns' and feeding remains. The results of this survey will determine any further recommendations for this species, which will include the need for an appropriate mitigation strategy should they be present on the site.

No recommendations are made for otter, although the previous recommendation to include a no-disturbance zone along the river bank will ensure that any occasional commuting individuals will remain undisturbed.

### **5.2.5 White-clawed crayfish**

If the recommendation made in Section 5.1 to include a no-disturbance zone along the river bank is followed, then no further recommendations relating to this species are required. However, should the watercourse be directly affected by the proposed development then a further survey to establish the presence/absence of this species is recommended.

### **5.2.6 Reptiles and great crested newts**

Precautions are required to prevent harm to reptiles and great crested newts during the development as follows (joint recommendations are provided as their requirements are similar):

- All vegetation over the area of land to be developed will be strimmed to ground level during the weeks prior to development and maintained in that condition until the development is complete.
- Any fallen timber, piled-up brash or other debris within the area to be developed will be removed by hand prior to development.
- Between October and March, any exposed tree root systems that need to be removed will be checked for hibernating great crested newts by a suitably qualified ecologist prior to removal.

### **5.2.7 Nesting birds**

All nesting birds are protected by law. To avoid committing an offence, any works to habitat that might be used by nesting birds should be undertaken outside the bird breeding season (March to August inclusive). If this is not possible, the habitat or structure to be affected should be checked immediately prior to works commencing by a suitably qualified ecologist. If there are breeding birds present, works cannot continue until the chicks have fledged and left the nest.

### **5.2.8 Other species**

The impact on other species is likely to be minimal. Therefore there are no recommendations in relation to other species.

## **5.3 Ecological enhancement**

Current planning policy requires that development projects minimise ecological damage and should contain elements of ecological enhancement. A variety of habitat creation options could be implemented at the site. The following are not statutory requirements but would be considered appropriate options for the site should the developer wish to offset the negative impacts of the site development.

- Bird and bat boxes could be installed in the woodland;
- Linear scrub boundaries should be gapped up where necessary with native species and managed appropriately by coppicing or laying in sections every 10-15 years;
- Log piles suitable for invertebrates and amphibians could be created from any tree removal operations at the site.
- The existing canopy could be thinned through sensitive removal of trees (for example by coppicing) in order to allow the ground flora to flourish.
- The overhanging scrub and trees over Tach Brook could be sensitively thinned in order to reduce shading and encourage growth of marginal plant species.

## 6 LEGISLATION

### 6.1 Introduction

This section briefly describes legal protection applying to species mentioned in this report. It does not comprehensively reflect the text of the legislation and it should not be relied upon in place of it. The following items of legislation are relevant:

- The Wildlife and Countryside Act 1981 (as amended);
- The Countryside and Rights of Way (CRoW) Act 2000 (in England and Wales);
- Conservation (Natural Habitats etc.) (Amendment) Regulations 2010 (which implements the EC Directive 92/43/EEC in the United Kingdom)
- The Local Government Act 1985;
- The Environmental Protection Act 1990; and
- The UK Biodiversity Action Plan (not itself a Statutory Instrument but referred to in SIs and planning guidance).

### 6.2 Protected Species

#### 6.2.1 Great crested newt, dormouse and all species of British bat

The great crested newt *Triturus cristatus*, dormouse *Muscardinus avellanarius* and all species of British bat (Vespertilionidae and Rhinolophidae) are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and receive full protection under Section 9. Protection was extended by the Countryside and Rights of Way Act 2000 (the CRoW Act). These species are also all listed as European Protected Species on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (which implements the EC Directive 92/43/EEC in the United Kingdom) which gives them full protection under Regulation 53. The legal implications of these two sets of legislation are largely compatible, making it an offence to:

- deliberately capture, injure or kill any wild specimens
- deliberately take or destroy eggs
- damage or destroy a breeding site or resting place of such an animal.
- possess any part of an individual either alive or dead, or
- sell or attempt to sell any individual.

It is also an offence to set and use articles capable of catching, injuring or killing bats (for example a trap or poison), or knowingly cause or permit such an action.

The great crested newt and seven species of British bat are included as priority species in the UK Biodiversity Action Plan and as species of principal importance for the conservation of biological diversity in England under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000.

#### 6.2.2 Birds

All species of bird are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). Protection was extended by the Countryside and Rights of Way (CRoW) Act 2000. Under the above legislation it is an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Certain species are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and receive protection under Sections 1(4) and 1(5). The protection was extended by the Countryside and Rights of Way (CRoW) Act 2000. There are special penalties where the offences listed above are committed for any Schedule 1 species and it is also an offence to intentionally or recklessly:

- disturb any such bird when it is building its nest or while it is in or near a nest containing dependant young; or
- disturb the dependant young of any such bird.

### 6.2.3 Common reptiles

Common lizard *Lacerta vivipara*, grass snake *Natrix natrix*, slow worm *Anguis fragilis*, and adder *Vipera berus* are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), in respect of Section 9(5) and part of Section 9(1). This protection was extended by the Countryside and Rights of Way (CRoW) Act 2000.

Under the legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of these species; or
- sell or attempt to sell any part of these species either alive or dead.

These species have recently been listed as priority species in the UK Biodiversity Action Plan and as species of principal importance for the conservation of biological diversity in England under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000.

### 6.2.4 Hedgehog, harvest mouse, brown hare and polecat

These species are listed as priority species in the UK Biodiversity Action Plan and as species of principal importance for the conservation of biological diversity in England under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000.

### 6.2.5 Badger

The Badger (*Meles meles*) is protected in Britain under the *Protection of Badgers Act 1992* and *Schedule 6 of The Wildlife and Countryside Act 1981* (as amended). The legislation protects Badgers and their setts, and makes it a criminal offence to:

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

The Badger is also protected under *Schedule 6 of the Wildlife and Countryside Act 1981* (as amended) relating specifically to trapping and direct pursuit.



## 7 REFERENCES

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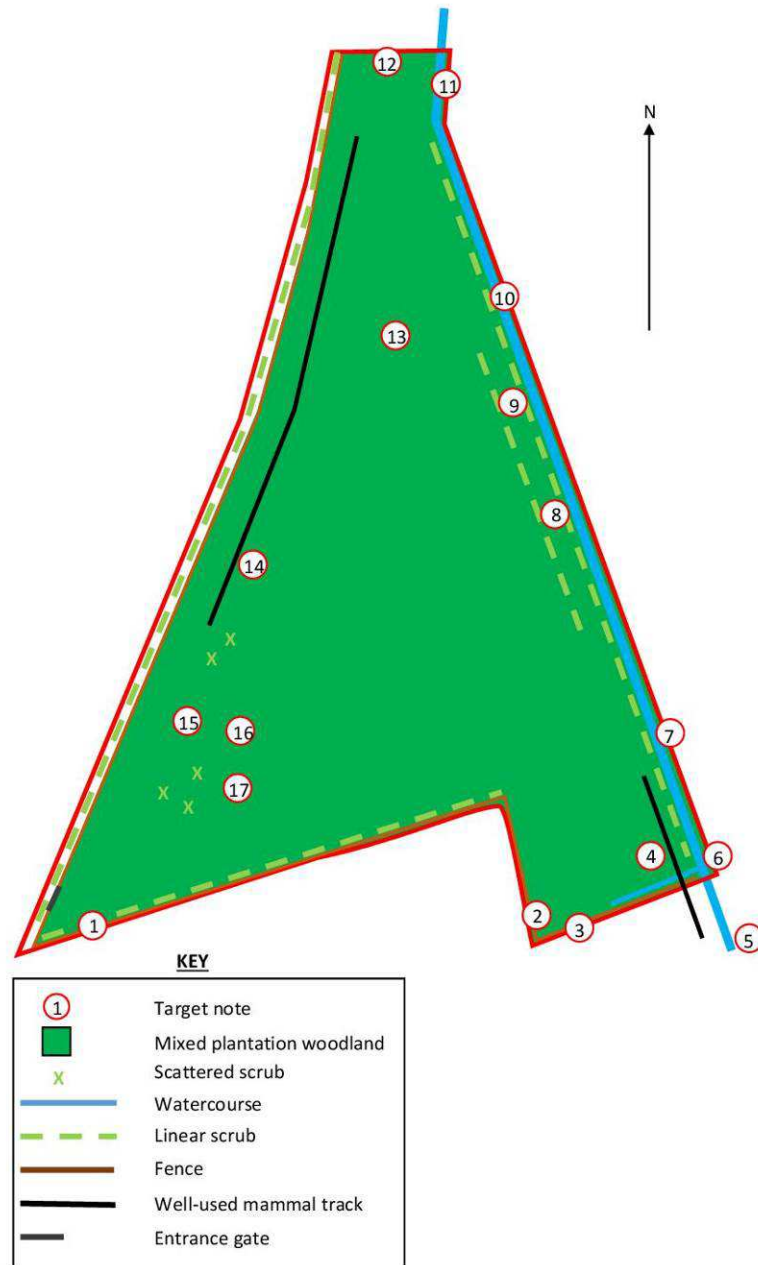
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## 8 FIGURES

Figure 1: Phase 1 Habitat Survey of Land East of Europa Way



*Table 4: Target note descriptions*

<b>Target Note</b>	<b>Description</b>
1	Active badger sett entrance in linear scrub boundary. Fresh spoil and badger hair found.
2	Very active badger latrine at edge of site.
3	Disused possible badger sett entrance and a number of additional smaller holes.
4	Marshy area with locally frequent sedge and dock spp.
5	Mature willow tree outside site boundary with high potential for roosting bats.
6	Group of burrows in brook's eastern bank at water's edge. One hole has the distinctly 'flat' shape that is characteristic of crayfish burrows.
7	Group of possible water vole burrows at water's edge on eastern bank of brook.
8	Mature coppiced willow – no obvious bat roosting potential noted.
9	Mature ash with bat roosting potential beneath lifted bark in places.
10	Group of burrows at water's edge on brook's eastern bank.
11	Mature oak tree with dense ivy cover that may support roosting bats or obscure bat roosting features.
12	Stand of locally frequent ash saplings.
13	Mature oak tree with high bat roosting potential.
14	Badger latrine.
15	Area of locally frequent pendulous sedge.
16	Area of locally frequent common nettle.
17	Badger foraging activity.

## **APPENDIX 1 – BACKGROUND DATA SEARCH**