PRELIMINARY ECOLOGICAL APPRAISAL

Land Adjacent to Lower House Gardens, Fownhope, Herefordshire

Final report
19th August 2014

Client:
Mr David Watkins

Rose Cottage
Market Square
Kineton
Warwick
CV35 0LP

Tel 01926 642541

Email swifteco@swiftecology.co.uk
Website www.swiftecology.co.uk

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QUALITY CONTROL

DATE	VERSION	NAME	SIGNATURE
16.8.14	Draft prepared	Dr Nick Underhill-Day BSc MSc GradCIEEM Ecologist	[redacted]
17.8.14	Checked by	Lisa Kerslake BSc MSc CEcol FCIEEM Principal Ecologist/Director	[redacted]
19.8.14	Reviewed and issued	Dr Nick Underhill-Day BSc MSc GradCIEEM Ecologist	[redacted]

The information which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Every reasonable attempt has been made to comply with BS42020 (Biodiversity: Code of practice for planning and development), the JNCC Handbook for Phase 1 Habitat Survey and relevant protected species survey guidelines (see references). If compliance has not been achieved, justification/explanation has been given.

SUMMARY

- A Preliminary Ecological Appraisal including a Phase 1 habitat survey and protected species assessment, and a bat roost assessment were undertaken on 8th July 2014 of a site off the B4224 public highway in Fownhope, Herefordshire.

- The surveys were required in connection with a planning proposal for development of the site for several residential dwellings.

- The site surveyed measures approximately 1.1 ha and comprises mostly improved grassland, a small area of broadleaved woodland, hardstanding and a large industrial-style building. There are also small areas of scrub, tall herb and ephemeral short perennial vegetation, scattered trees and a length of boundary hedgerow. Some of these habitats, including the woodland, improved grassland, building and areas of hardstanding would be lost as a result of the development; habitats and plant species identified on the site are common and widespread locally, regionally and nationally.

- An initial bat survey of the building on the site revealed no evidence of roosting bats and a low likelihood of bats being present. Precautionary measures for dismantling of this building are recommended.

- The site has some suitability to support other protected species, including dormice, birds and reptiles, and recommendations are made for precautionary working methods.

- Additional recommendations are made in light of the site's proximity to the River Wye Special Area of Conservation.

1 INTRODUCTION

1.1 Background

This report describes a Preliminary Ecological Appraisal, including a Phase 1 habitat survey and protected species assessment, and preliminary bat roost assessment undertaken on 8th July 2014 at a site off the B4224 public highway in Fownhope, Herefordshire. The survey was required in connection with a planning proposal to develop the site for residential dwellings. The site is located at approximate OS grid reference SO 574 346.

1.2 Personnel

The survey was carried out by Dr Nick Underhill-Day. Nick is employed as Ecologist with Swift Ecology Ltd and is a licensed bat worker (NE Bat licence WML-CL17 CLS03069). He has carried out numerous habitat and protected species assessments, and has undertaken bat surveys, including both preliminary roost assessments and activity surveys, of a wide variety of buildings such as residential dwellings, farm buildings, industrial buildings and churches. He also has considerable experience in the associated ecological appraisal of protected species, including bats, badger, otter, water vole, dormouse, reptiles and amphibians, and in methods required for appropriate mitigation.

1.3 Site Description and Ecological Context

The site lies adjacent to Lower House Gardens on the north-western edge of the village of Fownhope, Herefordshire. Access onto the site is gained via a short driveway off the B4224 public highway, which runs past the site on its north-eastern boundary.

The site comprises a small area of broadleaved woodland, areas of grassland and a large industrial-style shed with associated areas of hardstanding. It is bound on its north-west and south-east sides by fencing and hedgerow respectively, while the south-west boundary provides open access into adjacent arable fields. The site is roughly rectangular, 200 m long by 75 m wide, and encompasses an area of approximately 1.1 hectares.

The site is surrounded on the north, west and south by agricultural farmland, a mixture of arable crops and pasture lined by hedgerows and hedgerow trees, while to the east lies the village of Fownhope, comprising mostly residential dwellings and associated gardens. To the west, a little over 100 m distance, flows the River Wye, from north to south, with land between the river and the site forming part of the river floodplain.

Located less than 150 m to the north-east of the site are the westerly woodlands of the Woolhope Dome. These include the contiguous woodlands of Cherry Hill,

Fiddlers Green, Even Pits and Bagpiper's Tump. The extensive Haugh Wood and adjoining woodlands lie roughly 1.2 km to the north-east, while Lea and Paget's Wood is located 1.8 km to the south-east.

The River Wye and its tributaries are lined with riparian trees, scrub and herbaceous vegetation, and thus the site has some ecological connectivity, via connecting hedgerows, with pastoral and arable farmland and other semi-natural habitats in the area. The River Wye is designated a Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI).

2 METHODS

2.1 Background Data Search

A background data search was undertaken by the Herefordshire Biological Records Centre (HBRC) of designated sites and protected species records within a 2 km radius around a central OS grid reference, SO 574 346.

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 (CIEEM, 2013) and the Phase 1 Habitat Survey Methodology (JNCC, 2010).

The Phase 1 Habitat Survey comprised:

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

2.2.2 Protected species assessment

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*, otter *Lutra lutra*, great crested newt *Triturus cristatus*, reptiles and nesting birds. There are large areas of woodland in the local area with some connectivity to the site, so the presence of hazel dormouse *Muscardinus avellenarius* is possible.

The site lies over 100 m from the River Wye, across open arable fields, and thus the likelihood of water voles *Arvicola amphibius* occurring on the site is extremely low; the HBRC holds no recent records for water vole within 2 km of the site. Consequently, the presence of this species on the site can be discounted.

Weather conditions during the site visit were good, cloudy but without rain. Visibility was good and the air temperature was 16°C.

2.2.3 Bats

There is a small area of woodland on the site and several scattered trees along the site boundaries; trees were assessed from ground level for their potential to support roosting bats. A single industrial-style building (see Section 2.3) was assessed for its suitability for roosting and use by foraging bats. Habitat was noted for its bat foraging and commuting potential.

2.2.4 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.

2.2.5 Otter

Due to the site's proximity to the River Wye and associated tributaries, habitat was assessed for its suitability to support otter. Features such as tree roots, fallen trees, grass tussocks, scrub and mud were briefly searched for evidence of otter spraints, lay-ups and footprints; a full otter survey was not undertaken.

2.2.6 Hazel dormouse

Woodland, hedges and areas of scrub were assessed for their suitability to support dormice; a full dormouse survey was not undertaken.

2.2.7 Great crested newt

There are no ponds within the site. However, this species may use terrestrial habitat within 500 m of breeding ponds; such habitat is also protected. Therefore, terrestrial habitats on site were assessed for their potential to support this species, based on factors including vegetation structure and composition, and the availability of shelter and foraging resources.

2.2.8 Reptiles

The suitability of habitats on site for common reptiles (adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*) was assessed, based on factors such as the quality of the foraging resource, the presence of suitable sites for basking, and the presence of refugia for shelter and hibernation.

2.2.9 Nesting birds

Habitats on site were assessed for their suitability for breeding birds and nests were recorded if they were encountered. Bird species observed or heard during the survey were recorded.

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 Preliminary Bat Roost Assessment

An initial bat survey of the large building on the site was undertaken by Nick Underhill-Day of Swift Ecology Ltd. Nick holds a Natural England licence for the disturbance of bats (licence number WML-CL17 CLS03069).

2.3.1 Assessment of bat roost potential

The building was assessed for its potential to support bat roosts. This involves a consideration of various factors including:

- Light levels
- Temperature regime and protection from weather
- Access to the interior of the building or to other suitable roost sites
- Potential roost sites
- Building construction
- Habitat context

Based on these factors, an assessment was made of whether the building might support bats, and the type and number of roosts that might be present.

2.3.2 Survey for signs of bats

A detailed inspection was made of the exterior and interior of the building for any evidence of recent bat use, such as live or dead bats, droppings, scratch marks, staining and prey remains, and in some cases the absence of cobwebs. Large quantities of cobwebs in roof voids or at access points tend to be suggestive of no bat use, although this evidence is not conclusive.

Features identified as possible bat access points or potential roosting locations were thoroughly searched where possible, using powerful torches and binoculars to facilitate the process. An endoscope and ladders were available to enable more detailed inspection of cracks and crevices as far as access allowed.

2.4 Constraints

Early July is an optimal time for Phase 1 habitat survey because many plants are flowering; however, some early- or late-flowering species may not be in evidence and may be missed. Also, a single visit to a site at any time of year will identify only a proportion of the species present. Therefore the descriptions given in Section 3.3 should not be considered to be complete.

There were no constraints to the protected species assessment.

3 RESULTS

3.1 General

The site was visited on 8th July 2014. The site is approximately 1.1 hectares and consists mostly of broadleaved woodland, grassland, hardstanding and a large steel-framed building. There is a single entrance onto the site from the B4224 public highway, which runs along the north-eastern edge.

On the day of the visit the grassland was relatively short, with the patchy sward containing the decomposing arisings of recent mowing. The remaining habitats, including the broadleaved woodland, hedgerow, scrub and tall herb vegetation, showed no evidence of recent management.

The northern boundary is partially lined by a row of tall poplar *Populus* sp. trees and fencing while the southern boundary supports an unmanaged hedgerow; it is unknown if this hedge lies on the site or within the adjacent land. Several trees, patches of scrub and tall herb vegetation are scattered along the site's north, west and southern boundaries. On the east the site is partially bound by the broadleaved woodland.

The distribution of these habitats is illustrated in Figure 1, and the characteristics of each are described in section 3.3. Some of the habitats present have the potential to support protected species, including the scrub, tall herb vegetation, scattered trees and the large building.

3.2 Background Data Search

3.2.1 Designated sites

Data were obtained from the Herefordshire Biological Records Centre (HBRC). The River Wye Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) runs a short distance (minimum 110 m) to the west of the site; the river supports several nationally and internationally important species including Annex II[1] species (allis shad *Alosa alosa*, twaite shad *Alosa fallax*, sea lamprey *Petromyzon marinus*, brook lamprey *Lampetra planeri*, river lamprey *Lampetra fluviatilis*, Atlantic salmon *Salmo salar*, bullhead *Cottus gobio*, otter *Lutra lutra*, Atlantic stream crayfish *Austropotamobius pallipes* and freshwater pearl mussel *Margaritifera margaritifera).*

To the north-east, east and south-east are five areas of woodland, within 2 km of the site, with SSSI (Site of Special Scientific Interest) status; the closest, Cherry Hill Wood, is approximately 150 m to the north–east; Common Hill lies 425 m to the east; Haugh Wood is located 1.2 km to the north-east and Lea and Paget's Woods over 1.7 km to the south-east.

A map of designated sites is provided in Appendix 1.

[1] **Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora**

3.2.2 Protected species

The HBRC holds 1929 records for protected or priority species, from 1990 to 2013, within 2 km of the site. Key records of protected species are provided below (section 3.4) under the relevant species or taxon heading. A map of designated species is provided in Appendix 2.

An absence of records does not mean that a species is not present, merely that it has not been recorded. There may be further undetected records for such species on the study site or in the local area.

3.3 Habitats

3.3.1 Grassland

The site supports a large area of mown grassland (Plates 1 and 2) and a several smaller patches of mown grassland supporting common grass and forb species. Within the middle of the grassland there is a large pile of manure (Plate 3, Target note 1).

Grass species include perennial rye-grass *Lolium perenne*, Italian rye-grass *Lolium multiflorum*, cock's-foot *Dactylis glomerata*, false oat-grass *Arrhenatherum elatius*, Yorkshire fog *Holcus lanatus*, common couch *Elytrigia repens*, meadow foxtail *Alopecurus pratensis*, barren brome *Anisantha sterilis*, rough meadow-grass *Poa trivialis* and annual meadow-grass *Poa annua*.

Forb species include dandelion *Taraxacum officinalis* agg., daisy *Bellis perennis*, meadow buttercup *Ranunculus acris*, broad-leaved dock *Rumex obtusifolius*, white (Dutch) clover *Trifolium repens*, self-heal *Prunella vulgaris*, field forget-me-not *Myosotis arvensis*, ribwort plantain *Plantago lanceolata*, greater plantain *Plantago major*, common sorrel *Rumex acetosa*, crane's-bill *Geranium* sp., creeping thistle *Cirsium arvense*, nettle *Urtica dioica* and bramble *Rubus fruticosus*.

Along the grassland edges, bordering the hedgerow or fence lines, or where the grass has been left for longer periods between cuts, there is nettle, bramble, thistles *Cirsium* sp., greater burdock *Arctium lappa*, hedge woundwort *Stachys sylvatica*, nipplewort *Lapsana communis*, white dead-nettle *Lamium album*, comfrey *Symphytum* sp., common mallow *Malva sylvestris*, smooth sow-thistle *Sonchus oleraceus* and mayweed *Tripleurospermum* sp.

3.3.2 Broadleaved woodland

The small (*c*. 0.16 ha), broadleaved woodland to the immediate north of the site entrance (Plate 4) supports relatively young specimens of sycamore *Acer pseudoplatanus* (dominant), beech *Fagus sylvatica*, silver birch *Betula pendula*, field maple *Acer campestre*, ash *Fraxinus excelsior* and the occasional Leyland cypress *Cupressus* × *Leylandii*. Running along the northern edge of the woodland, and extending further along the northern boundary, is a row of tall poplar *Populus* sp. trees.

The woodland understorey comprises field maple, English elm *Ulmus procera*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, mountain ash *Sorbus aucuparia*, ash saplings, beech saplings, sweet chestnut *Castanea sativa*, cherry *Prunus* sp., elder *Sambucus nigra* and holly *Ilex aquifolium;* many specimens appear to have been planted, and are supported by stakes and tree guards.

The ground flora is dominated by nettle, ivy *Hedera helix* and wood avens *Geum urbanum* but also supports bramble, cow parsley *Anthriscus sylvestris*, hedge woundwort, lords-and-ladies *Arum maculatum*, male fern *Dryopteris filix-mas* and small saplings of elm, ash, field maple, sycamore, beech, holly, hazel and elder.

3.3.3 Hedgerow and scattered trees

The species-rich hedgerow (*c.* 5-7 metres tall) running the length of the south-eastern boundary (Plate 5) includes hawthorn, blackthorn *Prunus spinosa*, hazel, spindle *Euonymus europaeus*, elder and dog-rose *Rosa canina*. The hedgerow is covered in bramble, cleavers *Galium aparine* and several specimens of white bryony *Bryonia dioica*.

On the south side of the site entrance is an alternating row of silver birch and larch *Larix* sp. trees. Along the north-west boundary there are several specimens of ash, field maple, Italian alder *Alnus cordata*, cherry and poplar; several trees support traveller's joy *Clematis vitalba*. On the south-west boundary, are several multi-stemmed white willow *Salix alba* (Plate 6) and a medium-sized field maple. In the west of the site there is also a short row of Leyland cypress and in the east a Western red cedar *Thuja plicata*.

3.3.4 Scrub and tall herb vegetation

Scrub is dominated by large stands of bramble but there are also areas of elder and a large stand of butterfly-bush *Buddleja davidii*.

Areas of tall herb vegetation lining the verges at the site entrance, and running along the site boundaries, include nettle, cleavers, hedge woundwort, black horehound *Ballota nigra*, broad-leaved dock, herb-Robert *Geranium robertianum*, ground-ivy *Glechoma hederacea*, common sorrel, thistles, greater burdock, willowherb *Epilobium* sp., white dead-nettle, nipplewort, yarrow *Achillea millefolium*, ragwort *Senecio* sp., meadowsweet *Filipendula ulmaria*, cow parsley, hogweed *Heracleum sphondylium*, rough chervil *Chaerophyllum temulum*, wild parsnip *Pastinaca sativa* and hemlock water-dropwort *Oenanthe crocata*.

3.3.5 Ephemeral short-perennial

In places where the hardstanding is breaking up, pioneer/ruderal species are present (Plate 7) and include white clover, dandelion, willowherb, common sorrel, smooth sow-thistle, ragwort, hedge bindweed *Calystegia sepium*, field forget-me-not, scentless mayweed *Tripleurospermum inodorum*, black medick *Medicago lupulina*, greater burdock, bramble and grasses.

3.3.6 Buildings and other features

There is a large industrial-style steel-framed building on the site adjacent to the north-western boundary (Plate 8); this building was surveyed for potential bat roosts (see Section 3.5). There are also three shipping containers on the site (Plate 9) as well as large areas of hardstanding and a pile of aggregate (Plate 10).

Plates 1 and 2: Improved grassland

Plate 3: Large manure pile

Plate 4: Site entrance and woodland (right)

Plate 5: Hedgerow on southern boundary

Plate 6: Willow and scrub

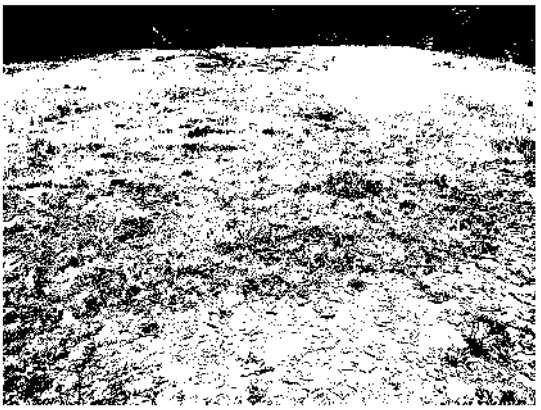

Plate 7: Ephemeral short perennial

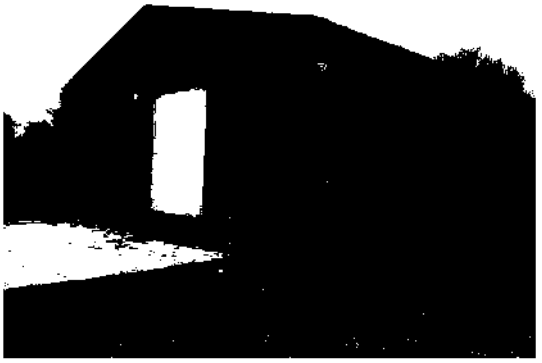

Plate 8: Large steel-framed building

Plate 9: Containers

Plate 10: Piles of aggregate

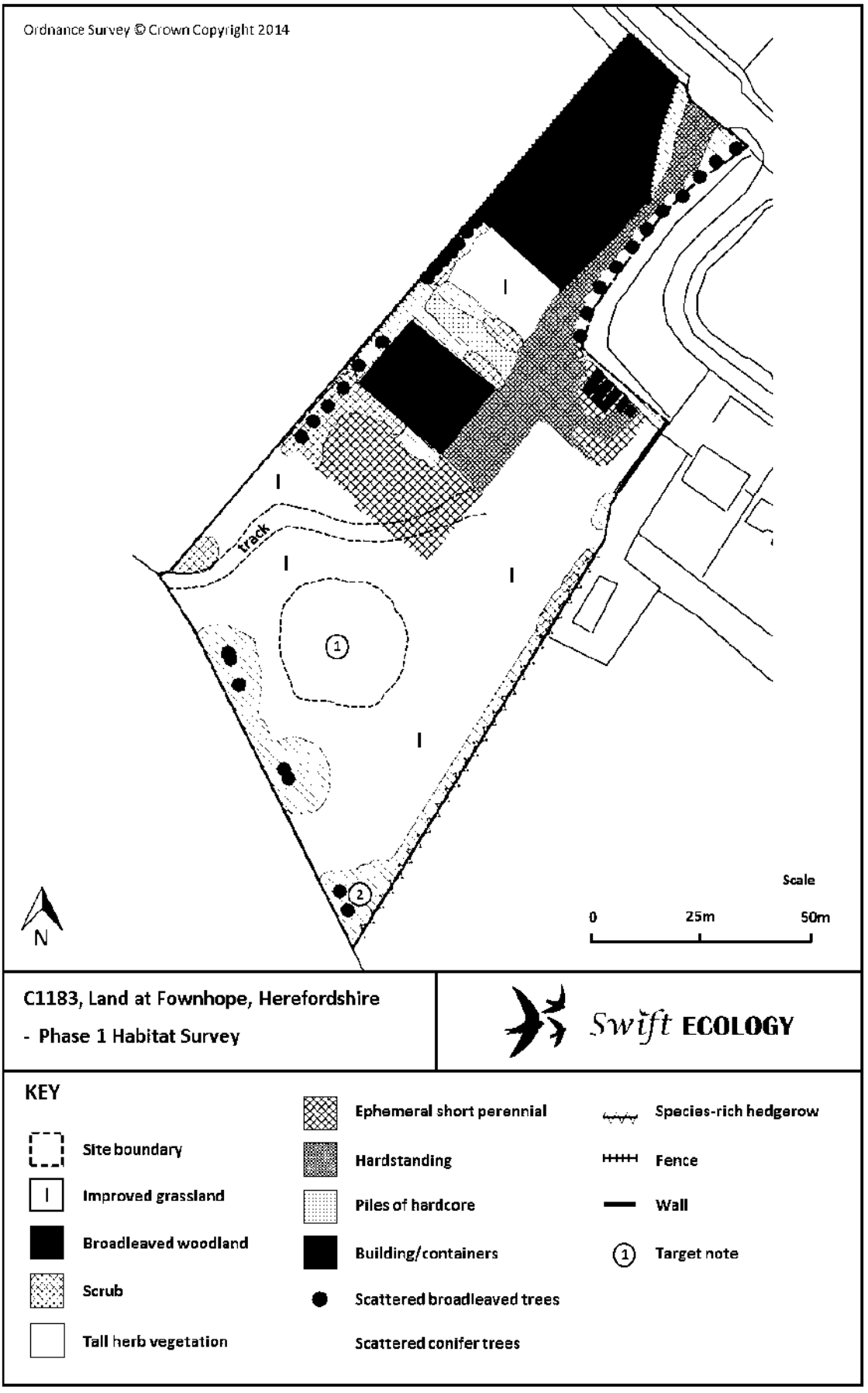

Figure 1: Phase 1 habitat map of the site at Fownhope, Herefordshire.

3.4 Protected Species Assessment

3.4.1 General

Habitats on the site, including grassland, broadleaved woodland, hedgerow, scattered trees, scrub and tall herb vegetation are mostly of low biodiversity value but have some potential to support protected species such as nesting birds, reptiles and bats.

The site's links to adjacent areas of semi-natural habitat, such as tree and hedge lines, and the nearby watercourse of the River Wye, may enhance connectivity with the surrounding landscape enabling movements of mobile species between such areas.

3.4.2 Bats

In the southern corner of the site, there is an old white willow (Target note 2); this tree is in decay and partially hollow, and supports features such as knot holes and tear-outs that might offer roosting opportunities for bats. The row of tall poplar trees on the north-western boundary might also support features suitable for roosting bats.

There is little potential for any other of the site's trees to support roosting bats; the woodland trees are relatively young, perhaps no more than 30 years old, and are not of sufficient age and character to support features suitable for roosting bats.

The peripheral hedgerow on the south-eastern boundary could act both as a flight line for commuting bats and as a foraging resource. The woodland and scattered trees in the north-west and south-west part of the site may also be used by foraging bats.

The HBRC holds 107 bat records for the local area, from between 1990 and 2012, of at least seven species of bats including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, whiskered bat *Myotis mystacinus*, Daubenton's bat *Myotis daubentonii*, noctule *Nyctalus noctula* and lesser horseshoe bat *Rhinolophus hipposideros*.

3.4.3 Badger

The site's grassland provides some suitable foraging habitat for badgers, which favour established grassland as a source of invertebrate prey.

The woodland, areas of scrub and tall ruderal vegetation may provide suitable places for sett-digging; no setts were found during the survey and there was no evidence of badger use of the site.

The HBRC holds 3 records for badger, from between 1993 and 2009, within 2 km of the site.

3.4.4 Otter

The River Wye is located approximately 110 m from the south-western boundary of the site, across open arable fields. The small patches of scrub and tall herbaceous vegetation surrounding the willow trees located along the south-western boundary might provide suitable lay-up sites for otter, although this is rather unlikely considering the distance from the river and nature of the intervening habitats.

The presence of an otter holt is highly unlikely due to the relative distance of the river from the site and the nature of the intervening landscape; this species prefers to create holts or dens a short distance (within 10-20 m) from watercourses. There are few features on the site that would provide suitable opportunities for otters to rest in.

There were no signs of otter on the site and the site is unlikely to support this species. However, a full survey for this species was not undertaken.

The HBRC holds 1 record for otter from 2007, within 2 km of the site, from a location approximately 1 km north and associated with a large pond and tributary of the River Wye.

3.4.5 Hazel Dormouse

The site contains scrub and broadleaved woodland that might be suitable for dormice; these habitats provide a variety of tree, understorey and scrub species, including sycamore, ash, birch, hazel and bramble, which might offer suitable food resources, while the woodland canopy and associated understorey is structurally suitable for dormice to move around in. However, the woodland is too small (*c.* 0.15 ha) to support a viable population of this species.

The woodland has some connectivity with the larger woodlands of the Woolhope Dome to the north and east. Cherry Wood is located only 150 m to the north-east; if dormice occur in this woodland they may be able to disperse onto the site via a connecting hedgerow, although the B4224 public highway between the site and the hedgerow might present a partial barrier to movements of this species.

No evidence of hazel dormouse was found on the site; a full survey for this species was not undertaken.

The HBRC holds 8 records for hazel dormouse, from between1990 and 1993, within 2 km of the site. At least 6 records are associated with Cherry Hill and Fiddler's Green woods, a short distance to the north of the site.

3.4.6 Great crested newt

The woodland, patches of scrub and taller herbaceous vegetation might offer suitable terrestrial habitat for great crested newts.

There are no ponds on the site and the nearest known pond is some 480 m distance, to the west across the River Wye; so unless suitable ponds lay undetected close-by, the presence of great crested newts on the site is highly unlikely.

The HBRC holds 6 records for great crested newt, from between 2005 and 2008, within 2 km of the site; five records are from a location 800 m to the south-east, on the outskirts of Fownhope village, and are associated with a small orchard and nearby pond.

3.4.7 Reptiles

The short-mown grassland, scrub and tall herbaceous vegetation might provide suitable foraging habitat for common and relatively mobile reptiles such as slow-worm *Anguis fragilis* and grass snake *Natrix natrix*. The sheltered eastern and southerly aspects of the woodland edge, scrub, tall herb vegetation and piles of aggregate may provide basking habitat. There were features on the site that could act as suitable reptile refugia including logs, stacked wooden crates and pallets.

The HBRC holds 41 records for three species of reptiles (grass snake *Natrix natrix,* slow worm *Anguis fragilis* and adder *Vipera berus*) within 2 km of the site; all records for reptiles are associated with Haugh Wood, Cherry Hill Wood or Common Hill Sites of Special Scientific Interest.

3.4.8 Nesting birds

The site supports a range of birds that potentially breed on the site, including the following species seen or heard during the field visit: robin *Erithacus rubecula*, wren *Troglodytes troglodytes*, greenfinch *Carduelis chloris*, linnet *Carduelis cannabina*, house sparrow *Passer domesticus* and wood pigeon *Columba palumbus*.

The HBRC holds numerous records for birds within 2 km of the site.

3.4.9 Other species

The habitats present on the site may support other species of high biodiversity value, such as common toad *Bufo bufo*, brown hare *Lepus europaeus*, polecat *Mustela putorius* and hedgehog *Erinaceus europaeus;* these species are National Biodiversity Action Plan Species and Species of Principal Importance[2].

3.5 Initial Bat Survey

3.5.1 Building description

The building on the site was surveyed for its potential to support roosting bats (Figure 1). This building is a large, steel-framed modern agricultural shed with corrugated metal panelled walls and corrugated tin-panelled pitched roofing (Plates 8 and 11). The roof is generally tightly sealed with metal flashing; the only gaps being the corrugations underneath the flashing or within the panelled roof tiles.

[2] http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx

The interior of the building (Plate 12) is open from the concrete floor to the roof, which is supported by steel girders. The walls and roof are lined with soft synthetic panels, presumably of a fire retardant material. The building is currently used to store vehicles, crates and other materials.

3.5.2 Assessment of bat roost potential and survey for signs of bats

The building contains few suitable materials/features (e.g. old wooden beams, gaps or crevices) for either roof-void or crevice-dwelling bats; the steel girders supporting the roof were mostly lined with large quantities of cobwebs, which tends to be suggestive of no bat use, although this evidence is not conclusive.

There may be spaces between the walling/roof panels and the interior paneling; however, corrugated metal panelling is generally less suitable for bats to roost under due to its high thermal conductivity and associated temperature extremes.

The building is well-sealed, with no obvious access for flying bats, well-lit with electrical lighting and subject to human disturbance on a daily basis. No evidence of roosting bats was found and there is a low likelihood that bats roost within this building.

Plate 11: Building exterior

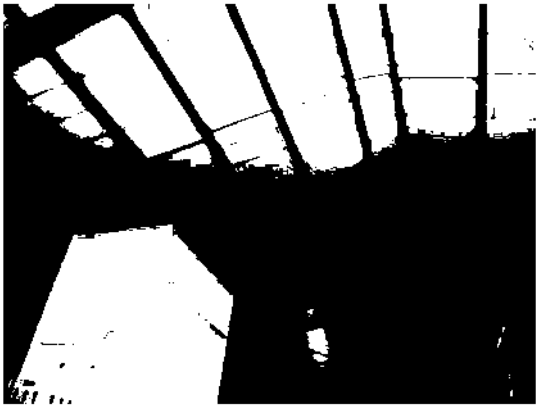

Plate 12: Building interior

4 EVALUATION

4.1 Habitats

The proposed development will result in the permanent loss of an area of secondary woodland, improved grassland, patches of scrub and tall herb vegetation, small areas of ephemeral short perennial vegetation, a large modern industrial style building and areas of hardstanding.

Felling of or other works to any larger trees on the site, including the willow on the south-western boundary and poplars on the north-western boundary, could impact upon bats, nesting birds and invertebrate species. If these trees are retained within the development plan, and are otherwise unaffected by the development, impacts would be expected to be negligible.

The proposed plan will result in the loss of the majority of the broadleaved woodland in the north of the site. The woodland contains mostly young sycamore, 10-12 metres in height, and with a trunk diameter at breast height of between 30 and 40 cm. Other canopy species that will be lost include young specimens of beech, silver birch, ash and field maple; individually, none are of high biodiversity significance but have some collective ecological value and conservation benefit. Understorey species that might also be lost include field maple, English elm, hawthorn, hazel, mountain ash, ash saplings, beech saplings, sweet chestnut, cherry elder and holly; some of these may have been recently planted.

Loss of most of these habitats from the site will not result in any significant impacts upon floral biodiversity; the secondary woodland has few indicators of ancient woodland and the ground flora is species-poor. A recent tree survey commissioned by Jamieson Associates Architects assigned 'retention categories' to all identified trees on the site, based on their overall arboricultural quality, general health, structural stability, useful life expectancy, significance to the local landscape, amenity value and the degree to which they provide wildlife habitat and enhance local biodiversity (Mackley Davies Associates Ltd. 2014); most trees were of minor value with only a series of nine sycamores, several white willow and a field maple assigned moderate quality. Only the white willows and single field maple on the south-west boundary were assigned a sub-category on the basis of their ecological/conservation value. This study largely agrees with the evaluation of the tree survey report. However, the woodland may have some collective value for protected species, including bats and hazel dormice (see Sections 4.2.1 and 4.2.4).

The grassland vegetation is of low biodiversity value consisting predominantly of common species which are widespread throughout the UK, and are typically associated with agricultural improvement. It is not expected that any unusual or rare plant species will be lost or affected but the description given in section 3.3 should not be considered to be complete as a full botanical survey was not undertaken.

Agricultural access into the arable fields to the south-west of the site is proposed via a new access track running along the south-eastern boundary; it is unclear how this will impact the species-rich hedgerow running along this boundary; such features hold great value for wildlife and provide important ecological connectivity to areas of semi-natural habitat.

The site is close to the River Wye Special Area of Conservation, and thus there is a risk, albeit rather small considering the size of the outline plan, that the proposed development could cause disturbance or indirect effects to the riparian habitats of the river corridor. No other designated sites would be affected by the proposed development.

4.2 Protected Animal Species

4.2.1 Bats

The broadleaved woodland, grassland, scrub and tall herb vegetation, hedgerow and scattered trees may offer foraging opportunities for bats; however, the area of short-mown improved grassland provides only sub-optimal foraging habitat for bats, while loss of small areas of other semi-natural habitat, such as patches of scrub and tall herb vegetation, in the context of the wider landscape, is unlikely to have any significant impact upon foraging bats.

The woodland edge, tree line on the north-western boundary, and hedgerow on the south-eastern boundary, could act both as flight lines for commuting bats and as a foraging resource. Although it is anticipated that the woodland trees will not be directly affected by the development, there is a potential risk that light spill from artificial lighting associated with the proposed development could impact upon bats commuting or foraging within these areas.

There is one large white willow, growing on the south-western boundary of the site (Target note 2), that has potential for use by roosting bats. The tall poplar trees may also contain features with potential for use by roosting bats. There may, therefore, be impacts upon bats if they are present, if any of these trees are removed, pollarded or otherwise affected as a result of the development. Also, if bats were roosting in any of these trees, it is possible that light spill from artificial lighting associated with the development might have an impact on roosting bats.

Inspection of the building revealed no evidence of roosting bats and few features that are likely to support roosting bats, particularly roof void dwelling bats. There may be small gaps between internal paneling and the exterior corrugated wall and roof panels; however, the metal paneling makes this building exposed to extremes of temperature, which is less suitable for roosting bats, and thus there is a low likelihood of bats being present.

This building has a low potential to support roosting bats. None-the-less, because the presence of roosting bats within this building cannot be ruled out entirely, there is a risk that demolition may have an impact upon roosting bats.

4.2.2 Badger

The site's grassland provides some suitable foraging habitat for badgers, and thus there is likely to be a minor loss of foraging habitat as a consequence of the proposed development; however, this is likely to be fairly insignificant in the context of other suitable habitat nearby.

The site comprises a high proportion of open grassland and hardstanding, and is generally unsuitable for badger setts although the woodland, areas of scrub and tall herb vegetation, and the boundary hedgerow, may be suitable locations for sett digging. No badger setts were found and there was no evidence of badger use of the site. No impacts upon badger setts are anticipated.

The proposed development is unlikely to exert any significant impacts upon this species.

4.2.3 Otter

Although otter may occur along the River Wye, it is highly unlikely that this species occurs on the site, and thus the proposed development is unlikely to exert any significant impacts upon this species.

4.2.4 Hazel dormouse

The site contains some habitat suitable for dormice but is too small (*c.* 0.15 ha) to support a viable population of this species or even a single individual; home range size for this species is upwards of 0.5 ha, and more often over 1 ha for sub-optimal habitat (Bright, Morris & Mitchell-Jones, 2006). However, dormice may occasionally enter the site's woodland during dispersal. Direct arboreal connectivity from extensive woodland in the surrounding area is relatively poor; a single hedgerow partially links the site with woodland to the north-east but the intervening B4224 public highway presents a partial barrier to movements of this species onto the site.

Loss of the small woodland, as a result of the development, could impact upon individuals of this species if they occur, but will not affect the status of local populations.

4.2.5 Great crested newt

There are no ponds on the site, and no known ponds within 250 m of the site; consequently, there is a low probability that great crested newts are present on the site, so any development is highly unlikely to have an impact on this species, although its presence cannot be completely ruled out.

The proposed development is unlikely to exert any significant impacts upon this species.

4.2.6 Reptiles

The peripheral scrub and tall herb vegetation provides structurally suitable habitat for reptile foraging and shelter, particularly for common and relatively mobile species such as slow-worm and grass snake. However, these habitats are relatively small and patchy and the site is mostly surrounded by open arable fields, roads and housing, and thus movements of reptiles across these exposed areas may be limited. Movements of reptiles onto, and across, the site may also be limited due to the presence of extensive areas of short-mown grassland and hardstanding.

The areas of degraded hardstanding in the north-west of the site, and the southern and eastern aspects of the site boundary, provide basking opportunities for reptiles and there are features on the site, including logs, stacked wooden crates and pallets which provide suitable refuges for hibernation or extended torpor. Any development of or disturbance to this habitat might have an impact upon reptiles if they are present.

4.2.7 Nesting birds

Nesting birds use the semi-natural habitats on the site, including the woodland and boundary habitats. Species affected may include common breeding birds, such as robin, wren, wood pigeon and greenfinch. The development is likely to have a negligible impact on such birds, outside the breeding season.

A house sparrow colony was recorded on the site and may use the site's buildings for nesting. Demolition of the building will potentially result in loss of breeding habitat for one or two breeding pairs of these species but the impact at a county level is likely to be insignificant.

4.2.8 Other species

Areas of grassland, scrub and tall herb vegetation that are suitable for hedgehog or common toad may be lost as a consequence of development, although in the context of the extent of surrounding habitat, any such impacts are likely to be insignificant.

5 RECOMMENDATIONS

5.1 Habitats

- It is recommended that the white willows and field maple on the south-west boundary are retained.

- It is recommended to retain the species-rich hedgerow running the length of the south-eastern boundary.

- Loss of woodland should be compensated for by planting new trees and hedgerow which would provide important habitats for invertebrates, bats and birds; hedgerow/tree planting should contain native species such as oak, ash, field maple, goat willow, hawthorn, blackthorn, holly, hazel and elm. Trees and hedgerow could be planted along the north-west and south-west boundaries; the western part of the site, within the area of the floodplain, may also be suitable for planting new areas of woodland to compensate for those lost.

- Habitat enhancements could also include planting of native or wildlife-attracting plant species, preferably sourced from local stock, in order to improve the site's biodiversity (see Section 5.3).

- It is recommended that any artificial lighting is sensitively designed in order to minimise disturbance on natural habitat, including the retained woodland. This could be achieved by incorporating directional cowling and buffer planting to reduce the effects of light-spill. Lighting will be controlled through the construction period and night-time working will be avoided where possible.

- Given the proximity of the proposed development to the River Wye SAC, any potential impacts on the SAC will need to be taken into account in all aspects of this development. Although any such impacts are likely to be minor, further assessment (e.g. Habitat Regulations Assessment) might be required.

5.2 Protected Animal Species

5.2.1 Bats

Trees

Some of the larger trees on the site have the potential to be used by bats for roosting. Some of these trees may be retained (i.e. white willow). For larger trees that need to be removed (i.e. tall poplar trees), pollarded or otherwise affected (e.g. crown reduction) as a result of the development, precautions for bats will be required as follows.

- Prior to works all trees must be assessed for use by bats; this may require a physical inspection using an endoscope, ladder or tree climbing equipment if needed. Bat activity surveys may be required if bat use cannot be ruled out on the basis of this further inspection.

- In the event of a bat or evidence of bats being found at any time during tree works, to avoid committing an offence all work must stop immediately and advice must be sought from a licensed bat ecologist.

Building
Due to the low potential of the building to support roosting bats, it is recommended that precautionary measures are adopted during the dismantling of the building, in order to minimise impacts in the unlikely event that roosting bats are present.

- Metal roof and wall panels, metal flashing and interior paneled lining should be removed carefully by hand or with light machinery. **In the unlikely event that a bat is discovered during this process, all work must stop immediately and Natural England will be consulted. Further surveys and a European Protected Species licence may be required**.
- All site workers will be made aware of the possibilities of finding bats and the procedure to follow should they be found. If at any point during works a bat is discovered, contractors will stop work immediately and telephone an ecological professional qualified to deal with bats. Telephone numbers of such will be held on site (Swift Ecology numbers: 07825 711862 or 01926 642541).
- Should any bats fall out of structures or be injured, they will be gently placed in a secure ventilated box (*e.g.* a cardboard box) by the contractor and left in a cool dark place, until appropriate advice can be sought. Bats should not be handled without gloves.
- A copy of these recommendations will be available to site workers and displayed on site.

Development
- If artificial lighting is to be installed, efforts should be made to minimise light spill on to the remaining habitats, including the small area of woodland and boundary hedgerow; this will minimise impacts upon commuting and foraging bats.

5.2.2 Badgers

Badgers are mobile animals and can excavate new setts at any time. Therefore, if during any development evidence of a sett is discovered, all work must stop immediately and the advice of a suitably qualified ecologist should be sought.

5.2.3 Hazel dormouse

Loss of the small area of broadleaved woodland may result in impacts upon individuals of this species, if they occur on the site; consequently, to avoid impacts

(i.e. injury or killing) upon individuals of this species, the following measures will be adopted:

- Trees and understorey shrubs will be felled in the winter, between November and March inclusive, when dormice are hibernating at or below ground level. This avoids the period when dormice are in nests above the ground, and also avoids the bird nesting season.
- Clearance will be undertaken in a sensitive manner, by hand or with light machinery (e.g. chainsaw and light vehicles) in order to avoid ground compaction and excessive ground disturbance; a single haul-out route should be carefully cleared and subsequently used to extract felled timber and other vegetation from the area. Alternatively, a long-reach mechanical grab may be used from an area immediately adjacent to the woodland.
- During clearance of vegetation, all brash will be chipped or removed from the site. Logs can be extracted or stacked and removed the following summer.
- Stump extraction and ground works (e.g. earth removal) should take place no earlier than May of the following season, this allows dormice emerging from hibernation to escape from the area.
- If at any time a dormouse is discovered during vegetation clearance works, all work will cease immediately and a licensed ecologist will be consulted.

5.2.4 Otter

No impacts upon otters or water voles are anticipated. Therefore there are no recommendations in relation to these species.

5.2.5 Great crested newt and reptiles

As there are no known ponds within 250 m of the site, the risk of impacts upon great crested newts from the development is extremely low.

The grassland, scrub and tall herbaceous vegetation are potentially suitable for reptiles, and thus they may be present. However, as the area of semi-natural habitat to be impacted is relatively small, “reasonable avoidance measures” during clearance works should be sufficient to reduce any potential impact upon these species, if they occur; avoidance measures will also reduce the risk arising of any potential impacts upon great crested newts in the event that individuals are present on the site. The following measures will be adopted:

- If scrub patches and tall herb vegetation are to be removed, this should take place when reptiles are active (March to October) to avoid any disturbance should reptiles hibernate within these areas. If birds are nesting within the scrub, removal will take place in September/October only.

- Hand clearance of vegetation should aim to minimise any impacts upon individual animals.

- Grassland on the site that will be lost as a result of the development will be kept in a short mown condition to reduce its suitability for reptiles to forage or pass through.

- Any features on the site, such as logs, stacked wooden crates and pallets, which may be used for reptile shelter or hibernation, should be dismantled carefully by hand, or using light machinery, during March to October and removed from the site.

- If at any time a reptile or great crested newt is discovered during works, all work will cease immediately and a licensed ecologist will be consulted.

5.2.6 Nesting birds

All nesting birds are protected by law. To avoid committing an offence, any works to hedgerows, trees or other 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 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. This also applies to house sparrows which might be breeding in the building. Mitigation for the loss of nesting sites for house sparrow would include erection of bird boxes targeting this species; an example includes the Schwegler 1SP sparrow terrace[3].

5.2.7 Other species

The impact on other species is likely to be small. Therefore there are no recommendations in relation to other species, although they would benefit from incorporation of biodiversity enhancements into the proposed development.

5.3 Ecological enhancements

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 any negative impacts of the site development upon biodiversity.

1) Hedgerows should be incorporated into the proposed development, where possible, with native species. The following species are suggested for planting:

- Hawthorn *Crataegus monogyna*
- Blackthorn *Prunus spinosa*
- Hazel *Corylus avellana*
- Holly *Ilex aquifolium*
- Field maple *Acer campestre*
- Guelder rose *Viburnum opulus*
- Spindle *Euonymus europaeus*
- Pedunculate oak *Quercus robur*

[3] http://www.nhbs.com/bird_boxes_egcat_426.html

- Dogwood *Cornus sanguinea*

2) Addition of hedgerow tree species would add long-term biodiversity value to the development and will offset impacts from any trees removed.

3) Incorporation of borders of native grass and nectar rich wildflower species into the proposed development would add biodiversity value to the site and mitigate for small areas of scrub and herb vegetation lost. Grass and wildflower species should preferably be of local provenance and would attract pollinating invertebrates, such as butterflies and moths[4], reptiles, birds and other animals. These areas will require infrequent mowing, once or twice in mid- to late summer, to help develop and improve their biodiversity value. Small areas could also be planted with native shrub species (as above).

[4] http://butterfly-conservation.org/files/habitat-butterflies-and-farmland.pdf

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 of Habitats and Species 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, otter 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 Water vole

Water vole *Arvicola amphibius* is listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and receives full protection under Section 9.

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.

6.2.6 Common toad, brown hare, polecat and hedgehog

This species is listed as a priority species in the UK Biodiversity Action Plan and as a 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.

7 RELEVANT LITERATURE

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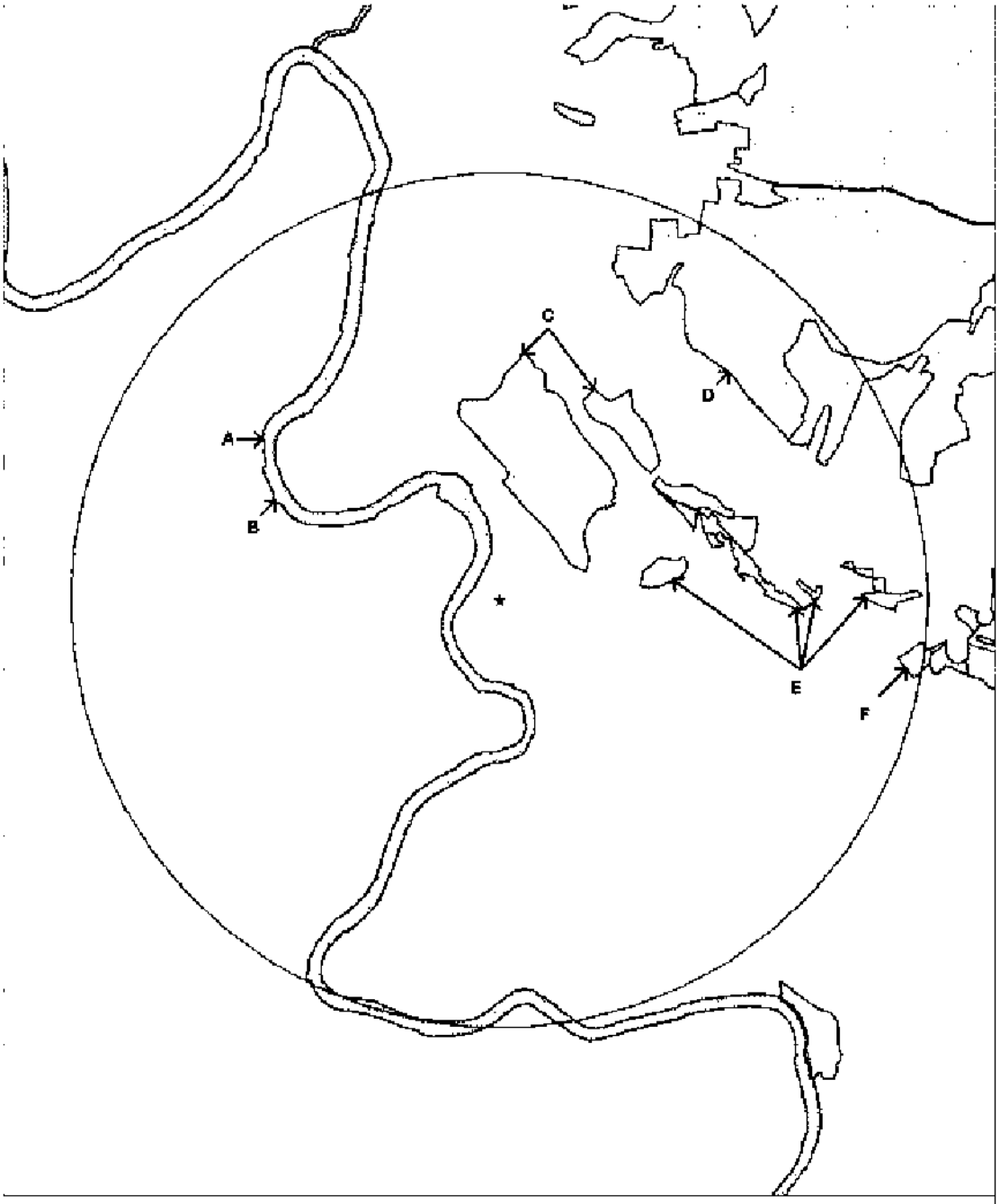
Mackley Davies Associates Ltd. (2014). *Tree Survey & Arboricultural Constraints Report. Land adjoining Lower House Gardens, Fownhope.*

Appendix 1 – HBRC Data Search Results: Designated Sites



Map showing statutory designated sites within 2km of SO574346 Fownhope

SCALE 1: 23,500

Appendix 2 – HBRC Data Search Results: Designated Species