



Land at Eversley Court, Minera

Ecological Survey Report

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1 Introduction

1.1 Background

Kingdom Ecology have carried out an ecological assessment of an approximate 0.5ha area of land located to the west of Eversely Court, Minera, Wrexham, LL13 3YZ (National Grid Reference- SJ 270 520). The assessment has been carried out to identify any ecological constraints which should be considered during any future development of the site.

An Ecological Assessment of the site was previously undertaken by Tyrer Ecology in 2015. This previous assessment comprised of an Extended Phase 1 Habitat Survey and Bat Activity Survey.

In summary, the Tyrer Ecology surveys identified the site as comprising principally of improved pasture and recently felled conifer plantation with a species-poor hedgerow running along the western boundary of the site.

The bat activity surveys found the site to be used by small numbers of common pipistrelle bats with most activity recorded along the trees and hedgerows along the site's northern and southern boundaries.

No evidence of any other protected species were found to be present at the site (including badger) although the site was found to offer suitable habitat for breeding birds within trees and hedgerows.

The 2015 surveys included a data search from COFNOD, the local biological records centre for North Wales.

The 2018 surveys comprised of an Extended Phase 1 Habitat Survey of the site. This was carried out on the 7th and December 2018. Survey was carried out by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard has extensive experience of undertaking habitat and protected species surveys as a professional ecological consultant with over seventeen years' experience.

1.2 Purpose of Report

This report provides and outlines the findings of the field survey undertaken in December 2018.

Surveys aimed to identify habitats and species which are either of importance in terms of their conservation value or are afforded statutory legal protection. The presence of such habitats or species would form a material consideration during the planning process and could pose a constraint to the redevelopment of the site.

The field surveys comprised of an Extended Phase 1 Habitat assessment with a search for habitats that could support any protected species.

Following a description of the survey findings and an overall evaluation of habitats at the site, the report goes on to make recommendations for further works, mitigation and ecological enhancement measures where relevant.

1.3 Relevant Protected Species Legislation

1.3.1 Environment (Wales) Act 2016

Section 6 of the Environment (Wales) Act 2016 places a legal obligation on public bodies in Wales to 'maintain and enhance biodiversity' whilst carrying out their functions.

Section 7 of that Act requires Welsh Ministers to publish and maintain lists of species and types of habitats in Wales that are regarded as of 'principal importance' for the purpose of maintaining and enhancing that biodiversity.

This section of the Act replaces the biodiversity duty originally outlined in Section 42 of the NERC Act 2006.

The presence at any proposed development site, of any priority habitat or priority species identified on these lists is of importance within the local authority planning process.

1.3.2 Birds

All wild birds in England and Wales are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird, or take, damage or destroy the nest (whilst being built or in use) or its eggs.

1.3.3 Bats

All British bat species are fully protected under the Wildlife and Countryside Act 1981 (as amended) and through their inclusion in Schedule II of the Habitats Regulations 2010 which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("EC Habitats Directive") which defines European protected species of animals.

British bats species are afforded further protection by the Countryside and Rights of Way Act 2000; and the Natural Environment and Rural Communities Act 2006.

Taken together, this legislation makes it an offence to:

- Intentionally or deliberately kill, injure or capture bats.
- Deliberately disturb bats, whether at roost or not.
- Damage, destroy or obstruct access to bat roosts.
- Possess or transport bats, unless acquired legally.
- Sell, barter or exchange bats.

A bat roost is interpreted as “any structure or place, which any wild bat uses for shelter or protection.” (Bat Conservation Trust 2012¹). A bat roost is protected whether or not bats are present at the time.

All species of British bat are considered a European Protected Species (EPS). The Conservation of Habitat and Species Regulations (2010) provide derogation against certain offences which could potentially affect an EPS through the EPS Licensing system.

1.3.4 Badger

Badgers are afforded protection under the Protection of Badgers Act (PBA) 1992; this act was introduced on welfare grounds. The Act is based primarily on the need to protect badgers from baiting and deliberate harm or injury. Badgers are not considered to be a species of any conservation concern. However the Act contains restrictions that apply more widely and can have implications where badgers and development come into conflict. All the following are considered criminal offences:

- to willfully kill, injure, take, possess or cruelly ill-treat a badger;
- to attempt to do so; or
- to intentionally or recklessly interfere with a sett.

Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or obstructed.

¹ Bat Conservation Trust (2012) ‘Bat Surveys: Good Practice Guidelines 2nd Edition’

2 Field Survey Methods

2.1 Survey Aims and Objectives

The survey aim was to assess the site as to its ecological importance by assessing the value of habitats and their suitability to support any protected or notable species. The purpose of this was to highlight any ecological constraints associated with future development proposals.

Field survey comprised of an Extended Phase 1 Habitat survey, this included an assessment of habitats at the site in terms of their suitability to support any other protected species including breeding birds, badgers and bats.

Species that are considered unlikely to be significantly affected by the proposed development, even if known to be present in the general vicinity, were 'scoped out' of the assessment.

2.2 Extended Phase 1 Habitat Survey

2.2.1 Methods

An Extended Phase 1 Habitat Survey of the study site was undertaken on the 7th December 2018. Survey was carried out following standard methodologies as described in the '*Handbook for Phase 1 Habitat Survey - a technique for environmental audit*' (JNCC, 2004²).

The aims of the Extended Phase 1 Habitat Survey were to:

- identify and map all areas of semi-natural habitat within the study area;
- provide a botanical description of the semi-natural habitats surveyed;
- identify areas or habitats that are of particular ecological interest for nature conservation and which require more detailed investigation;
- provide additional information regarding incidental observations of protected species and the potential of habitats to support such species.

A habitat map was produced and lists of dominant or notable vascular plant species were recorded in each of the major habitat types where relevant.

² JNCC (2004) '*Handbook for Phase 1 Habitat Survey - a technique for environmental audit*'

2.3 Badger

2.3.1 Methods

The badger survey was undertaken on 7th December 2018 and adopted the standard approach used in the National Badger Survey (Cresswell *et al.*, 1990)³ and recommended by the Mammal Society (described in the booklet '*Surveying Badgers*' (Harris, Cresswell and Jefferies, 1989⁴)). It involved walking the field boundaries at the site and searching for badger signs, including setts, latrines, foraging marks, badger hairs, trails and footprints.

2.4 Bats

The survey objectives were to identify and evaluate bat roosting habitat on site and to identify potential bat foraging and commuting habitat.

No buildings are present within the study site therefore the bat roost assessment focused on mature trees present.

Surveys followed methodologies prescribed in English Nature's *Bat Mitigation Guidelines* (Mitchell-Jones 2004)⁵ and the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* 3rd Edition (BCT 2016)⁶.

2.4.1 Tree Surveys

A visual inspection of mature trees within the site was made to assess their bat roosting potential. The inspection was made from ground level during daylight conditions using binoculars and a high-powered torch to assess the potential of any cracks and holes to support bat roosts, and to search for evidence of bat use such as droppings, scratch marks, staining etc. Surveys were undertaken on the 7th December 2018.

³ Cresswell, P., Harris, S., and Jeffries, D.J., 1990. The history, distribution, status and habitat requirements of the badger in Britain. Nature Conservancy Council.

⁴ Harris, S., Cresswell, P. and Jefferies, D., 1989. *Surveying Badgers*. Occasional Publication of the Mammal Society, No.9. Mammal Society, London.

⁵ Mitchell-Jones, A.J. 2004. *Bat Mitigation Guidelines*. English Nature, Peterborough.

⁶ Bat Conservation Trust (2016) *Bat surveys – Good Practice Guidelines* 3rd Edition. Bat Conservation Trust, London.

In addition to identifying actual bat roosts, the surveys also aimed to assess the suitability of the trees to support bats and consequently the likelihood of a bat roost being present that did not exhibit obvious field signs.

Roost suitability was assessed by examining structural features and surrounding habitat. Structural features that could influence the suitability of a tree to support roosting bats include:

- frost cracks
- trunk and branch splits
- woodpecker holes
- rot holes where branches have been removed
- hollow sections of trunk, branches and roots
- loose bark
- cavities beneath old root buttresses and coppice stools
- dense ivy
- bat or bird boxes

Important habitat features surrounding individual trees, which could influence roost potential include; whether the trees are in a semi-rural or parkland location, proximity to a significant linear feature (e.g. watercourse, mature hedgerow, wooded lane) or proximity to known bat roosts etc.

Taking account of these structural and habitat features, trees were assigned a level of roost suitability based upon professional judgement.

2.5 Hedgerow Surveys

2.5.1 Hedgerow Regulations 1997

Hedgerows at the site have been assessed to determine whether they qualify as 'important' under the Hedgerow Regulations 1997 which are the main regulations aimed at protecting hedgerows in their own right. These regulations are a part of the planning regulations and are administered by the local planning authority in England and Wales. The regulations are in place to allow planning authorities to protect important hedgerows from removal. Removal is uprooting or otherwise destroying a hedgerow, this includes serious damage to the root system or over-maintenance resulting in the death of the hedgerow.

Hedges that are less than 20m long (with some exceptions), garden hedges and former hedgerows that have grown to a line of trees are not covered by the Regulations. Trees within a hedgerow are considered to be a part of the hedge. If a hedge is removed without permission (whether important or not) the land owner may face an unlimited fine and may have to replace the hedge.

A landowner wishing to remove a hedgerow must serve a Hedgerow Removal Notice in writing to the local planning authority. The authority then has 42 days to determine whether or not the hedgerow is 'important' under the Regulations, and whether or not to issue a Hedgerow Retention Notice. The authority must consult the local parish/ community council and consider their views when making the decision. A Hedge Retention Notice is permanent, although a planning authority may withdraw it at any time.

If the hedgerow is not 'important', the authority cannot refuse a permission to remove it under the Regulations. If the hedgerow is important, the authority can issue a Retention Notice unless they are satisfied that circumstances justify the removal.

2.5.2 Important Hedgerows

To qualify as 'important', a hedgerow must be at least 30 years old and meet at least one of the following eight criteria, which identify hedgerows of particular archaeological, historical, wildlife and landscape value:

1. The hedgerow marks the boundary of a historic parish or township existing before 1850.
2. The hedgerow incorporates an archaeological feature.
3. The hedgerow is a part of or associated with an archaeological site.
4. The hedgerow marks the boundary of or is associated with a pre-1600 AD estate or manor.
5. The hedgerow forms an integral part of or is associated with a field system pre-dating the Enclosures Act.
6. The hedgerow contains a protected species listed under schedule 1, 5 or 8 of the Wildlife and Countryside Act 1981. In addition, species listed in certain red data books qualify.
7. The hedgerow includes, on average, in a 30m length one of:
 - a) at least 7 woody shrub and tree species listed in the regulations
 - b) at least 6 woody species and has at least 3 associated features.

- c) at least 6 woody species including a black-poplar tree, large-leaved lime, small-leaved lime or wild service tree.
- d) at least 5 woody species and has at least 4 associated features.

In northern England, the number of woody species is reduced by one.

- 8. The hedgerow runs alongside a bridleway, footpath, road used as a public path or a byway open to all traffic, and includes at least four woody species, on average, in a 30m length and has at least two associated features.

The associated features are:

- A bank or wall supporting the hedgerow along at least half of its length.
- Less than 10% gaps.
- On average, at least one tree per 50 metres of hedge
- At least three species from a list of 57 herbaceous woodland plants, including bluebell, primrose, wild strawberry and assorted ferns and violets
- A ditch along at least a half of the length of the hedge.
- A number of connections with other hedgerows, ponds or woodland.
- A parallel hedge within 15 metres of the hedgerow.

With regards to this report, the importance of hedgerows at the site have been assessed against ecological criteria only (criteria 7 and 8 within the Regulations).

3 Desktop Study

3.1 Sources of Information

As part of the previous 2015 surveys, ecological information on habitats, species and designated nature conservation sites was sought from COFNOD who are the biological records centre for the North Wales Region.

3.2 COFNOD Data

The COFNOD data search produced no records of protected species or habitats at or adjacent to the site. There are two records of common pipistrelle bat within 250m of the site. Just over 1 kilometre away a long standing bat hibernacula is present and is used by several bat species including Lesser Horseshoe.

Pen y Nant Local Wildlife Site is located approximately 250m to the southwest of the site.

The Berwyn Mountains Special area of Conservation and Ruabon Mountains and Minera Site of Special scientific Interest are located approximately 600m to the southwest of the site.

None of the nearby designated sites would be impacted by development proposals.

4 Survey Results

4.1 Site Description

The study site is located on the northwest edge of the village of Minera. The site measures approximate 0.5ha in area and comprises of two fields, the southernmost field is an improved pasture field and the northerly field is unmanaged and comprises of a tall herb community.

The site is marked by hedgerows at its north and west boundaries. There is a block of scrubby, broadleaved woodland immediately beyond the southern boundary of the site and an area of conifer plantation located to the northwest of the site. There are further areas of improved grassland pasture to the north and west of the site. The site is bounded to the east by residential housing and their associated gardens. The site is accessed from the east via a field gate on Eversley Court.

Wider habitats comprise of further agricultural land to the north and west whilst residential housing associated with the village of Minera is located to the south and east of the site.

The site location is shown on Figure 1 in the Appendix.

4.2 Habitats

4.2.1 Target Note Descriptions

A habitat map of the site with target notes is shown on Figure 2 in the Appendix. Photographs showing typical habitats recorded are also given in the Appendix. Habitat Target Notes are described below.

The southernmost field comprises of a cattle-grazed, improved pasture field (Target Note 1). The field measures approximately 0.2ha in area. The field was found to be heavily poached during survey.

The northeast corner of the field has been stock-fenced providing a small compartment of ruderal herb community comprising of ivy, nettle, creeping thistle, hogweed, and bramble with patches of false oat-grass and cock's-foot.

The western boundary of the site is marked by a gappy, species-poor hedgerow (Target Note 3 on Figure 2). The hedgerow principally comprises of hawthorn with patches of holly and willow also present. The hedgerow is not considered to qualify as 'important' under the Hedgerow Regulations.

There is a sycamore tree located along the hedgerow at Target Note 4. The tree offers suitable bat roosting habitat (See Section 4.3.1).

There is a band of scrubby, broadleaved woodland immediately beyond the southern boundary of the site (Target Note 5). The woodland is located along the route of a disused railway line. The woodland comprises of young/semi-mature sycamore with hawthorn and elder scrub plus a field layer of ivy and bramble. A footpath runs through the woodland providing access to an adjacent park and playground. The woodland is divided from the site by stock fencing. The woodland will not be directly affected by development proposals.

The field at Target Note 1 is divided from the adjacent field at Target Note 6 by a stock fence. A treeline of young, scrubby conifers, birch and willow previously ran along the fenceline, but this has recently been removed.

The field at Target Note 6 measures approximately 0.3ha in area. The field supports a tall herb community principally comprising of ruderal species. The field comprises of frequent broadleaved willow-herb, creeping buttercup, broadleaved dock and nettle with patches of Yorkshire fog, false oat-grass, soft rush and tufted hair-grass. There are scattered willow saplings within the field. The field has formerly been managed as conifer plantation but this has been felled and removed within approximately the last 10 years.

The northern boundary of the field is marked by a scrubby, gappy hawthorn hedgerow with young sycamore trees (Target Note 7). The hedgerow is not considered to qualify as 'important' under the Hedgerow Regulations. The hedgerow will not be affected by development proposals.

There are two mature sycamore trees located at the northwest corner of the site (Target Note 8). The southerly of the two trees support suitable features for roosting bats (See Section 4.3.1).

A narrow, seasonally wet drainage ditch passes into the site at the northern boundary and runs down the eastern edge of the field (Target Note 9). The drain is located within a shallow, vegetated depression and is approximately 25cm in width. The habitats surrounding the ditch are similar to those within the wider field but with more frequent creeping buttercup and soft rush. Beyond the drainage ditch are the gardens of the adjacent Eversley House. The edge of the gardens have been recently planted up with a line of laurel shrubs. The gardens support some mature trees including beech and Scots pine.

To the west of the field and beyond the proposed development site is an area of dense conifer plantation comprising of Norway spruce (Target Note 10).

4.3 Protected Species

The Extended Phase 1 Habitat Survey also considered the site's suitability to support protected species. Species considered during the assessment included bats, badgers, breeding birds and water vole.

The likely presence of each of these species groups is considered below.

Given the habitats present, it is considered unlikely that the site would support any other protected or notable species (i.e. reptiles, great crested newt, notable invertebrates etc).

4.3.1 Bats

Target Notes 4 and 8 on Figure 2 correspond to mature sycamore trees which offer bat roosting features of 'moderate' suitability.

The two trees are unlikely to be directly affected by development proposals and will be retained at the site.

Target Note 4 is a mature sycamore tree. The main trunk of the tree is dead whilst a single limb still supports buds and foliage. The tree may have been struck by lightning. The tree is approximately 7m in height. The tree offers potential bat roosting habitat behind lifting bark, within shallow, decayed holes within the main trunk and within rot cavities. The potential roosting features are considered to be relatively exposed and so the tree is considered to offer a 'moderate' bat roosting potential.

Target Note 8 refers to two mature sycamore trees located at the northwest corner of the site. The southerly of the two trees has a south-facing knot hole leading back to a potential cavity at a height of approximately 4m. The knot hole measures approximately 25cm x 10cm in area. The tree's knot hole is considered to represent a potential bat roosting feature of 'moderate' suitability.

No buildings would be affected by development proposals. However, bat roosts may be present within the residential properties located to the east and south of the site.

The scattered trees and hedgerow habitats along the site boundaries are likely to offer foraging and commuting habitat for bats in the locality.

The overall landscape is considered to support habitats of 'moderate' value to bats. The residential properties to the east and south suitable offer roosting habitat. There are areas of high-quality potential bat foraging habitat located approximately 300m to the south of the site along the River Clywedog which supports extensive areas of interlinked broadleaved woodland habitat.

The 2015 Tyrer Ecology Survey included three bat activity surveys which were conducted on the 2nd July, 14th July and 6th August 2015. The surveys included static and walked transect surveys of the habitats present.

The bat activity surveys found the site to be used by small numbers of common pipistrelle bats with most activity recorded along the trees and hedgerows along the site's northern and southern boundaries. Bats are considered likely to be commuting through the site from a nearby roost within the village. The only other species of bat recorded at the site comprised of a single noctule pass.

Habitats at the study site have not significantly changed between the 2015 and 2018 field surveys and so it is considered likely that levels of bat activity will still be more-or-less the same.

4.3.2 Badgers

No evidence of badger activity was recorded at the study site or within adjacent habitats during either the 2015 or 2018 field surveys.

4.3.3 Breeding Birds

The hedgerows, tree and scrub habitats are likely to be used as nesting and foraging habitat by common woodland, farmland and garden bird species.

The field of tall herb habitat at Target Note 6 could support low numbers of ground nesting birds.

4.3.4 Water Vole

A small drainage ditch runs along the eastern boundary of the site. The ditch is very shallow (less than 10cm deep) and is likely to be only seasonally wet. The drain measures approximately 25cm in width.

The drain is not considered to offer suitable habitat for water vole.

5 Potential Constraints and Recommendations

5.1 Habitats

The site measures approximate 0.5ha in area and comprises of two fields, the southernmost field is an improved pasture field and the northerly field is unmanaged and comprises of tall herb community.

These habitats are not considered to be of any significant biodiversity value in their own right.

Habitats of greater value mainly comprise of the hedgerows, trees and woodlands around and beyond the site boundaries.

5.1.1 Hedgerows

None of the hedgerows within the study site qualify as 'important' under the Hedgerow Regulations. Nevertheless, the hedgerows are considered to be of ecological value as they offer valuable refuge and foraging opportunities to various wildlife. Hedgerows are considered a 'priority' habitat under the Environment (Wales) Act 2016.

It is therefore recommended that development of the site should retain, protect and enhance these boundary features where possible.

New housing at the site should be set as far back from the existing boundary features as practicably possible.

It is recommended, that new lengths of species-rich hedgerow are planted at the site to enhance the ecological value of the development proposal. This could include the infilling of gaps within the existing hedgerows and also new hedge planting could be located along boundary features within the development area.

New hedgerows should comprise principally of hawthorn with blackthorn, hazel, holly, elder, oak and dog rose included in the species mix. It is also recommended that larger standard oak trees are planted along the hedgeline where possible.

Development of the site should also aim to avoid impacts to established broadleaved trees within and immediately beyond the site boundaries. This includes the sycamore trees at Target Notes 4 and 8 and trees located beyond the southern boundary of the site within the band of woodland at Target Note 5.

Mature trees, as well as being culturally and ecologically valuable in their own right, are also of importance to invertebrates, birds, mammals and other associated ecological groups through the provision of foraging resources and a variety of ecological niches including standing dead wood and the fungi and other organisms associated with decay.

Dead wood can support nationally rare, highly specialised invertebrates which often have limited abilities to disperse.

5.1.2 Habitat Enhancements

Where possible, other opportunities to enhance the biodiversity of the site should be taken such as the creation of areas of managed wildflower grassland, scrub or woodland within any amenity areas. It is recommended that such areas are sited along either the northern, southern or western boundaries where they will be connected to other areas of green space within the wider landscape.

5.2 Badgers

No evidence of badgers has been found at the site nor within immediate adjacent habitats.

Nevertheless, there is a risk that badgers could be present within the wider landscape and could occasionally access the site. Badgers could therefore be harmed during construction if works are carried out in an insensitive manner. It is therefore recommended that during construction:

- Where any trenches or other excavations are to be left open overnight, these should be fitted with mammal ramps or should have the sides battered to form a slope to allow badgers to escape.
- A tidy works area should be maintained during construction and any hazardous substances would be fenced off to remove any badger hazards from the site.

Following the implementation of these measures, it is considered to be unlikely that the proposed development will have a significant negative impact upon any local badger population.

5.3 Birds

All wild birds in England and Wales are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird, or take, damage or destroy the nest (whilst being built or in use) or its eggs.

The hedgerows habitats, tall herb and mature trees could be used by nesting birds during the breeding bird season.

Where possible, development of the site should avoid impacting upon hedgerows and mature trees.

Where this is not possible, removal of these habitat features and clearance of the tall herb habitat at Target Note 6 should be timed to avoid impacting upon birds during the breeding season (March-August inclusive).

A bird nest box scheme should be developed for the site. Nest boxes should offer suitable breeding habitat for a variety of bird species and can be built into new housing and fitted to retained mature trees.

5.4 Bats

5.4.1 Trees

Field survey identified two trees which support suitable bat roosting features (trees located at Target Notes 4 and 8).

Where possible these trees should be retained as part of the overall development.

If these trees must be removed, further survey works should be undertaken to further establish the likely presence/absence of any roosting bats.

Further survey could comprise of an additional tree climbing inspection and/or dusk emergence/dawn re-entry surveys. Given the poor condition of the Tree at Target note 4, a tree climbing inspection is unlikely to be appropriate.

If evidence of roosting bats is found, further compensatory bat roosting habitat would need to be provided and felling of the trees would need to be undertaken under a European Protected Species License.

5.4.2 Bat Commuting Routes

The 2015 bat activity surveys found the site to be used by small numbers of common pipistrelle bats with bats recorded commuting along the trees and hedgerows along the site's northern and southern boundaries. Bats are considered likely to be commuting through the site from a nearby roost within the village.

Although the site is unlikely to be of high value to local bat populations, it is recommended that efforts are made to retain bat commuting routes through the site. To this end, a bats and lighting mitigation plan should be produced. This plan should aim to retain dark corridors along commuting routes along the site's northern and southern boundaries. The plan should also aim to limit any light trespass from the development into the surrounding landscape.

A lighting designer will be appointed during the detailed design stage of the project. The lighting designer should consult the 'Bats and Lighting Research Project' (Stone 2013) which provides recommendations for limiting the negative effects of lighting on bats.

Where possible the use of artificial lighting should be avoided. Street lighting should be limited by restricting lighting to the central spine roads where possible with no new lighting proposed along any proposed side roads within 15m of the site boundaries. The lighting within the central spine roads and along the side roads should be designed to avoid light trespass into surrounding areas by the fitting of hoods and cowls.

The front and rear gardens of properties located adjacent to site boundaries should be lit with low intensity porch lights as opposed to with security flood lights. The porch lights should be fitted with screens to limit further light spill onto boundary features.

Particular effort should be made to avoid light spill onto the hedgerows around the site boundaries and onto the adjacent blocks of woodland at Target Notes 5 and 10.

Lighting sources should be 'bat friendly' using LEDs or low wattage lamps.

5.4.3 Bat Boxes Scheme

It is recommended that a bat box scheme is produced for the site. Bat boxes can be fitted to retained mature trees and can be built into the gable ends of new houses ideally adjoining the northern, southern and western site boundaries. Suitable models of bat box include the Schwegler 1FD which can be fitted to trees and the Habibat 003 or 005 which can be built into the brickwork of the new houses.

6 Appendix

Figure 1- Site Location



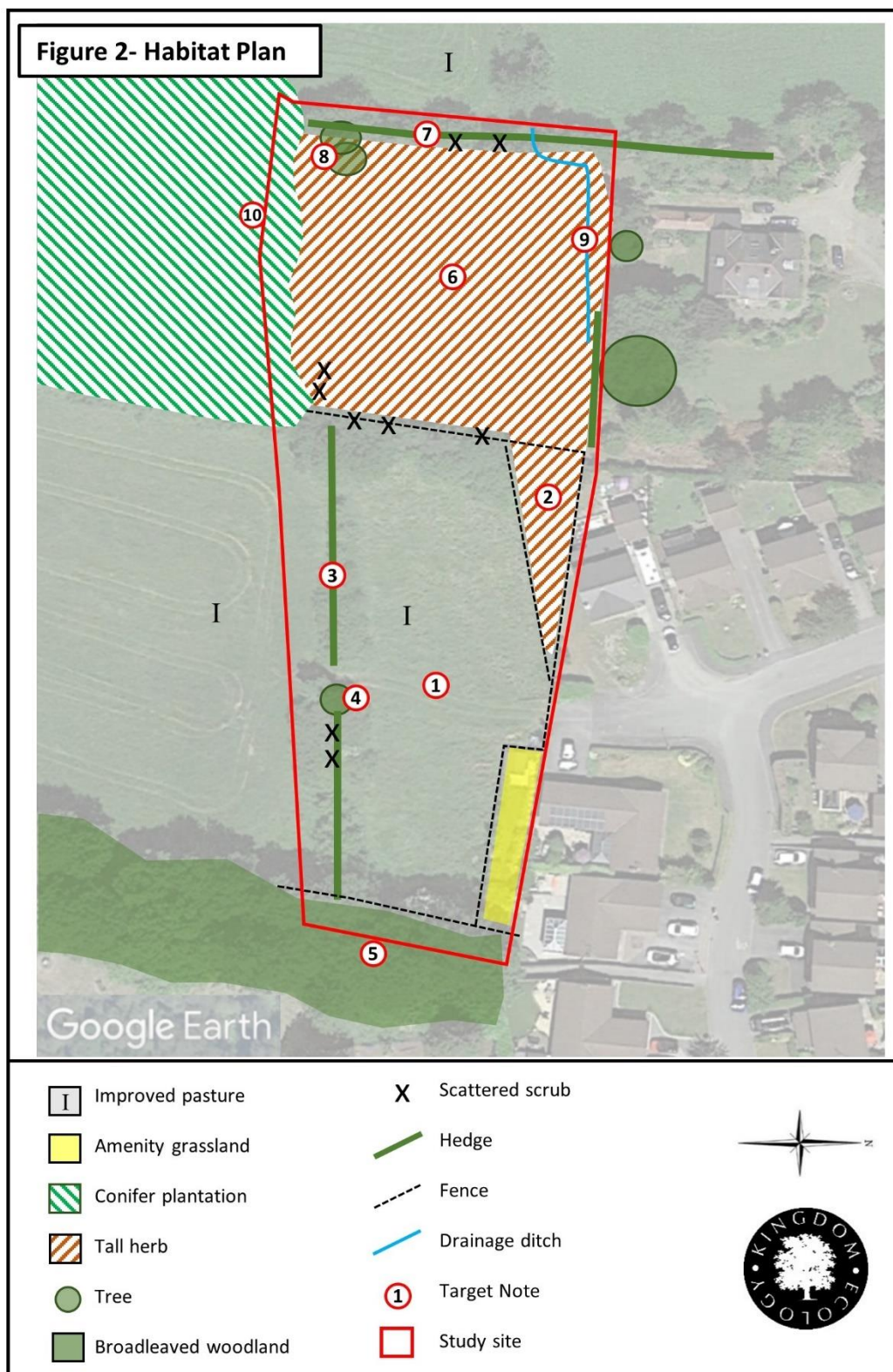
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Ordnance Survey 100054686



Study Site
Location





PHOTOGRAPHS

Photograph 1- View of site looking north from southern boundary



Photograph 2- Field at Target Note 1 and Woodland at Target Note 5



Photograph 3- Hedgerow at Target Note 3



Photograph 4- Tree at Target Note 4



Photograph 5- Field at Target Note 6 looking west to plantation at Target Note 10



Photograph 6- Boundary at Target Note 7



Photograph 7- Tree at Target Note 8



Photograph 8- Drain at Target Note 9

