



**LAND FORMING PART OF STANDRIDGE FARM
WIGGLESWORTH ROAD
SLAIDBURN
LANCASHIRE**

PRELIMINARY ECOLOGICAL APPRAISAL

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A report for

Avalon Chartered Town Planning

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PART 1 INTRODUCTION:

1.1 REASONS FOR SURVEY:

PENNINE *Ecological* have been commissioned by Avalon Chartered Town Planning and Architectural Consultancy, on behalf of the site owner, to undertake an Ecological Survey and Evaluation of land that once formed part of Standridge Farm, Wigglesworth Road, Slaidburn, Lancashire, BB7 4TR.

The study includes a vegetation survey, badger survey, breeding bird evaluation and preliminary bat roost survey and also includes a full evaluation of the ecological significance of the survey findings. A statement of potential impact and recommended mitigation measures are provided where appropriate.

The surveys are required in association with a proposal to erect a free-range egg unit on the site.

1.2 SITE LOCATION:

The site is located on the north side of Wigglesworth Road (B6478), Slaidburn, approximately 1500m north-east of the junction with Tinklers Lane. The habitats surveyed are shown on Map 1 in the Appendix.

Reference to the proposed site plans as submitted in support of the application should be made in respect of the development's layout.

1.3 SURVEY METHODOLOGY:

1.3.1 Extended Phase 1 Habitat Survey:

An Extended Phase 1 Habitat Survey (*Nature Conservancy Council 1990*) of the study area was undertaken on 15th June 2018. The site's habitats were fully mapped, and higher vascular plant species were recorded and given abundance values according to the standard DAFOR scale, where:

D = Dominant
A = Abundant
F = Frequent
O = Occasional
R = Rare

Where appropriate these values can be prefixed by the letter L (locally) or V (very), to provide more subtle biogeographical data.

1.3.2 Badger Survey:

The badger survey focused on land directly affected by the proposed development and land within 60m of the site (where accessible) but excluding the adjacent properties.

The survey used standard techniques for establishing the use of the site by badger, and includes searches for evidence of badgers including:

- Setts
- Pathways
- Footprints
- Latrines
- Foraging areas
- Scratching posts

1.3.3 Preliminary Bat Roost Survey:

All British bats and their roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2010.

The site was visited on the 15th June 2018 and an assessment of potential bat interest undertaken.

Guidance provided in *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Bat Conservation Trust 2016), was referred to in respect of the survey.

The surveys were undertaken by an experienced preliminary assessor for bats. Intrusive surveys i.e. requiring a bat licence were not undertaken.

1.3.4 Breeding Bird Evaluation:

A single-visit bird survey was undertaken on the 15th June 2018, to determine which birds were present on or near to the site. The study also includes an evaluation of the vegetation on and off-site and its suitability for ground-nesting species.

1.3.5 Other Species:

In addition to the above, general assessments of the suitability of the site to water vole and great crested newt were also undertaken as part of this study.

1.4 SURVEY CONSTRAINTS:

1.4.1 Extended Phase 1 Habitat Survey:

The survey was conducted at an optimum time for Extended Phase 1 Habitat Survey. The habitats present were easily classifiable in respect of the Phase 1 methodology and there were no constraints to the survey.

1.4.2 Badger Survey:

There were no constraints to survey.

1.4.3 Preliminary Bat Roost Survey:

There were no constraints to survey.

1.4.4 Breeding Bird Evaluation:

The survey was undertaken during the mid to late season of the upland bird breeding period. The constraint to survey is considered to be low.

1.4.5 Other Species:

There were no constraints to the evaluation of the site in respect of water vole and great crested newt.

PART 2 SURVEY RESULTS:

2.1 EXECUTIVE SUMMARY:

- The site forms part of the Forest of Bowland AONB.
- Standridge Farm Pasture Site of Special Scientific Interest (SSSI) is located approximately 400m west of the site.
- There are no other SSSIs within 1km but there are four within 2km of the proposal site boundary. These include, Barn Gill Meadow, Bell Sykes Meadows, Field Head Meadow and Langcliffe Cross Meadow.
- The Bowland Fells Special Protection Area (SPA) is located approximately 4.6km north of the site, and the North Pennine Dales Special Area of Conservation (SAC) 2km from the site.
- The owner has confirmed that the site is not a Biological Heritage Site (BHS) and there are no BHSs on the farm.
- The area affected by the proposal is composed of a mixture of semi-improved poor and marshy grassland.
- The habitats affected by the proposal are of 'local' (i.e. Parish) value only.
- Rush pasture is a Section 41 Habitat of Principal Importance in England (NERC) Act 2006.
- Curlew (nesting off-site) is a Section 41 Habitat of Principal Importance in England (NERC) Act 2006.
- There are no ponds capable of supporting GCN within 400m of the site.
- The scattered trees and woodland trees have 'negligible' bat roost potential.
- Potential bat foraging areas are present along the woodland edge.
- Impacts on potential bat foraging areas can be avoided by adequate stand-off zones and appropriate lighting controls.
- Nesting bird habitat on the site is restricted to the trees/woodland, and ground-nesting bird habitat is sub-optimal due to dense/tall sward structure and the overbearing presence of tall trees.
- The better ground-nesting bird areas are located off-site.
- Survey of the dry ditch revealed an absence of any feature associated with water vole.
- The survey revealed no evidence of use of the site by badger.

2.2 DESK BASED STUDY:

On the advice of the site owner, a request for ecological data to Lancashire Environment Record Network (LeRN) was not made.

However, the Multi Agency Geographical Information Centre www.magic.gov.uk was referred to in respect of statutory sites, and the NBN Atlas in respect of protected species.

Desk-based studies were also undertaken to establish the presence of ponds within a 500m radius of the site, as part of a scoping study relating to great crested newt (GCN)

The results of the desk study revealed the following information;

- The site has no statutory wildlife or ecological designations.
- Standridge Farm Pasture Site of Special Scientific Interest (SSSI) is located approximately 400m west of the site.
- There are no other SSSIs within 1km but there are four within 2km of the proposal site boundary. These include, Barn Gill Meadow, Bell Sykes Meadows, Field Head Meadow and Langcliffe Cross Meadow.
- The Bowland Fells Special Protection Area (SPA) is located approximately 4.6km north of the site, and the North Pennine Dales Special Area of Conservation (SAC) 2km from the site.
- The site is located in the Forest of Bowland AONB.
- The owners have confirmed that the site is not a Biological Heritage Site (BHS) and there are no BHSs on the farm.
- There are no ponds capable of supporting GCN within 400m of the site.

The NBN Atlas returned the following species records within 1km of the site, Sparrowhawk, Kestrel, Meadow pipit, Pink-footed goose, Buzzard, Golden-ringed dragonfly, Cypress-leaved plait-moss, House sparrow, Starling, Mole, Blackbird, Barn Owl, Frizzled pincushion and Lapwing.

The only records within 400m are of Kestrel and Sparrowhawk, which were recorded at 300 and 360m (approx.) from the site respectively.

2.3 EXTENDED PHASE 1 HABITAT SURVEY:

2.3.1 General Description:

The site is composed of three agricultural fields, two of which are separated by a linear stand of planted semi-mature broad-leaved woodland.

The field nearest the road will be used to provide the access to the site and is a sloping, rush-pasture pasture.

The field north of the plantation will be used for the poultry unit and is composed of a 'rough' semi-improved/rush-pasture. This field contains a dry ditch.

The field south of the woodland will also be used to provide the access track and is composed of a rush pasture.

The plantation is <30 years old and largely dominated by even-aged silver birch and downy birch.

The site boundaries are composed of post and wire stock fences only.

2.3.2 Extended Phase 1 Habitat Survey Target Notes:

Survey locations, Target Notes and the proposed working area locations are shown on Map 1 in the Appendix. All species nomenclature follows Stace, C. (1996) 'New Flora of the British Isles' – definitive English names.

Target Note No: 1

A semi-improved poor grassland with rush dominance approaching 25%, indicating transition to marshy grassland. Outside the area affected, rush-dominance is greater (50%), therefore when the field is viewed as a single unit when applying the Phase 1 methodology, the field is classified as 'marsh' (B5).

However, a more subtle interpretation of vegetative structure can be obtained through the National Vegetation Classification (NVC).*

Whilst soft-rush is a major component of the sward, the field is composed of a mosaic of both semi-improved poor and marshy grassland and is typical of transition where wet conditions favourable to the development rush-based communities occur.

The semi-improved swards have an affinity with the **MG6** *Lolium perenne*-*Cynosurus cristatus* grassland, with the transitional swards succeeding to the **MG10** *Holcus lanatus*-*Juncus effusus* rush-pasture.*

For Phase 1 mapping purposes, with the exception of the area nearest the road where significant levels of improvement have occurred, the field is classified as 'marsh' (B5), as it is the predominant habitat over the field as a whole, and there is an active transition from **MG6** to **MG10**.

*See *British Plant Communities* Vo. 3 *Grasslands and montane communities* (Rodwell et al. 1992)

In terms of floristic diversity, the historical 'improvement' has adversely affected diversity in the area within the development. Floristic interest is patchy, with areas of most value located on slightly flushed west-facing slopes north of the area affected.

These areas are characterised by the very localised presence devil's-bit scabious, marsh valerian, ragged-Robin, common marsh-bedstraw and common spotted-orchid.

Also, several immature sycamore are located in the south-west corner of the field.

Species:	Abundance:
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Soft-rush	LD
Crested dog's-tail	A
Perennial rye-grass	A

Target Note 1 continued.

Species:	Abundance:
Rough meadow-grass	A
Creeping buttercup	A
Red fescue	A
Yorkshire-fog	A
White clover	LA
Marsh foxtail	LA
Broad-leaved dock	VLA
Common nettle	VLA
Common mouse-ear	F
Meadow foxtail	LF
Tufted hair-grass	VLF
Oval sedge	VLF
Devil's-bit scabious	VLF
Common marsh-bedstraw	VLF
Marsh valerian	VLF
Ragged-Robin	VLF
Dandelion sp.	O
Common sorrel	O
Creeping thistle	O
Common spotted-orchid	VO
Cuckooflower	VO

Target Note No: 2

A stock-fenced, linear, broad-leaved plantation woodland at the base of the slope below the field described in Target Note 1.

The woodland is <30 years old, typically even-aged and lacks overall structure and native woodland ground flora.

There is no understorey and the ground-flora is composed of the precursor vegetation which includes rough meadow-grass and Yorkshire-fog.

Target Note No: 3

This is the field where the new poultry unit is proposed, and is composed of a rough semi-improved poor grassland previously used for cattle grazing. There is an affinity with the **MG6** *Lolium perenne-Cynosurus cristatus* grassland community here, where species-poor swards predominate.

While the field lacks diversity overall, some floristic interest is present but is very localised in very small patches only. (See Target Note 4 for details).

In addition, a dry ditch is present in this field, and while the ditch had obviously been dry for some time prior to the survey, it will inevitably collect rain water seasonally, particularly during winter.

The ditch is devoid of vegetation other than floating sweet-grass, which is locally frequent.

Species:	Abundance:
Rough meadow-grass	D
Red fescue	D
Soft-rush	A
Yorkshire-fog	A
Sweet vernal-grass	A
Field horsetail	LA
Sweet vernal-grass	LA
Perennial rye-grass	VLA
Crested dog's-tail	VLA
Common sorrel	LF
Common marsh-bedstraw	VLF
Jointed rush	VLF
Spear thistle	O
Curled dock	O
Tufted forget-me-not	O
Common spotted-orchid	R

Target Note No: 4

A more species-rich area of the field described in Target Note 3. This area is characterised by the presence of a range of wetland herbs.

Species:	Abundance:
Rough meadow-grass	A
Red fescue	A
Jointed rush	A
Yorkshire-fog	A
Sweet vernal-grass	A
Field horsetail	LA
Greater bird's-foot-trefoil	LA
Common sorrel	F
Common marsh-bedstraw	LF
Bog stitchwort	VLF
Marsh valerian	VLF
Water mint	VLF
Common sedge	VLF
Marsh thistle	O
Lesser spearwort	O
Cuckooflower	O

Target Note No: 5

A damp rush-pasture on north-facing slopes. Rush dominance in the area affected by the proposals is greater than 50%, therefore when applying the Phase 1 methodology, the field is classified as 'marsh' (B5).

However, rush dominance reduces in the western half of the field where more open swards occur.

The grassland has an affinity with the **MG10** *Holcus lanatus*-*Juncus effusus* rush-pasture as described in British Plant Communities.

Species:	Abundance:
Soft-rush	D
Cuckooflower	A
Yorkshire-fog	LA
Creeping buttercup	LA
Marsh-marigold	VLA
Marsh willowherb	F
Rough meadow-grass	F
Ragged-Robin	LF
Creeping bent	LF
Lesser stitchwort	LF
Common knapweed	LF
Ribwort plantain	LF
Selfheal	LF
Creeping thistle	LF
Tufted forget-me-not	O
Curled dock	O
Marsh thistle	O
Marsh ragwort	O
Tufted hair-grass	O
Common marsh-bedstraw	VO

Site Photographs - Habitats:



Photograph 1: Typical view of the semi-improved poor grassland at the proposed entrance to the site. (See Target Note 1)



Photograph 2: Typical view of the field described in Target Note 1 looking down slope (west) towards the woodland. Note limited but increased patchy rush cover.



Photograph 3: Typical view of the southern end of the woodland described in Target Note 2.



Photograph 4: Typical view of the grassland described in Target Note 3, looking north-east.



Photograph 5: Typical view of the dry ditch described in Target Note 3, looking north-east.



Photograph 6: Typical view of the grassland described in Target Note 5.

2.4 BADGER SURVEY:

2.4.1 Survey Details and Results:

The badger survey employed standard techniques to establish if badgers are present on site or use the site for foraging/commuting. (See Section 1.3 Survey Methodology)

The following searches were undertaken.

- Searches for setts on site and within 60m of the site. (Excluding the adjacent property next to the site entrance and land south of the road.)
- Searches for foraging signs and pathways.
- Boundary searches for runs, pathways and latrines.

The survey results are outlined below.

Sett Search:

The survey found no setts on the site or on the surrounding land

Search for Foraging Signs and Pathways:

The site was thoroughly searched for badger pathways or signs of foraging. No sign of badger activity was found therefore it can be concluded that the species is not using this area for foraging or commuting.

Boundary Search:

All of the boundaries of the site were walked and examined for potential runs, pathways and latrines. The search found no evidence to suggest badger activity along any of the site boundaries. The absence of any obvious means of ingress indicates that badgers are not entering the site. The absence of latrines indicates a lack of territorial activity in the near vicinity of the site.

2.4.2 Survey Conclusions:

The survey found no evidence of historic, recent or current use of the site by badgers for foraging, commuting or occupation and the species is considered to be absent on site and locally.

2.5 BIRDS:

2.5.1 Bird Evaluation:

A single-visit breeding bird survey was undertaken to determine what birds were present on the site and which were potentially breeding.

The site was walked at a slow pace and all species registered visually or aurally recorded.

The transect walked began at the proposed access point and followed the route of the proposed access road to the furthest, most northerly point of the proposed development site.

In addition to the above, the wider farm holding was accessed to determine what type of management regime is applied to each of the fields, and whether such regimes are conducive to ground-nesting birds.

Survey Results:

The only ground-nesting birds recorded were two pairs of curlew that, based upon the activity observed, appear to be holding territory off-site. It is estimated that the nearest pair to the site is approximately 150-200m north-west of the site in a rough pasture, and another pair nesting close to or just outside of the northern boundary of the farm.

No ground-nesting species were recorded on the site or within 200m where access allowed, and the only species registered were raven, carrion crow and wood pigeon, all species were observed flying over the site and surrounding area.

Conditions for ground-nesting birds on the land affected by the proposals is considered sub-optimal for the following reasons.

- The overbearing presence of a long/linear plantation woodland, which provides cover for both terrestrial and avian predators. Nesting in areas close to such features is avoided by ground-nesting birds.
- The thick fertile grassland swards and locally dense/tall rush pasture is difficult for wader chicks to negotiate.
- High sward height - skylark have a preference for shorter vegetation and are often unable to raise more than a single brood where the sward height becomes advanced early in the summer. *'a mosaic of sward heights with a sward height greater than 15cm in summer (Wakeham-Dawson & Aebischer 1997) ranging from bare ground to longer grass up to 25cm is ideal to meet both nesting and feeding requirements.'*
- The grassland height in the field affected well exceeds 25cm, and combined with the general density of the swards present, provides sub-optimal conditions for nesting skylark.

*The Lowland Grassland Management Handbook 2nd Edition (English Nature et al)

Comparing the proposal site with the area used by nesting curlew, the favoured areas are rough pasture where rush content is more scattered than in the proposal site. These areas provide good nest sites as well a cover and suitable foraging areas for chicks.

Conversely, the proposal site supports few of these features being composed of tall, dense, fertile, and sometimes rush-dominated swards. These areas provide good foraging areas for adults but difficult areas for chicks to negotiate.

In addition, the presence of the woodland reduces the proposal site value further.

Looking at the wider farm holding, in common with many stock farms nationally, most of the grassland is under silage production where several crops of grass are taken over the summer.

This is an intensive regime, and the unsustainability of ground-nesting birds, particularly lapwing and skylark in these habitats is well documented.*

*(See Donald, P.F. (2004) *The Skylark* and Shrubbs, M. (2012) *The Lapwing*)

Taking the farm holding as a whole, the fields most suitable for ground-nesting birds are the large field immediately west of the proposal site, and the northern part of the field containing the proposed poultry house.

Similarly-structured fields occur on neighbouring land that directly abuts the holding along the northern boundary. Collectively, all of these fields are considered to provide the most suitable conditions for ground-nesting birds locally.

The silage fields have 'low-negligible' value for ground-nesting species.

2.6 BATS:

2.6.1 Bat Evaluation:

During the site visit, the trees at the southernmost section of the plantation were examined for the presence of holes that could potentially be used as bat roosts. The surveys were undertaken at ground level using close-focusing Leica Trinovid 8x32 binoculars.

In addition, the site was assessed for its potential value for foraging and commuting bats.

Bat Roosts:

The roost search revealed that bat roost potential in all of the trees to be 'negligible' on account of an absence of holes and fissures that might potentially be used by roosting bats.

Most of the remaining plantation was also walked through, and it can be confirmed that the trees present are generally too immature to have formed any holes/fissures of value to roosting bats.

Foraging & Commuting Routes:

The woodland edge along both sides of the plantation potentially provides good foraging for any bats that might roost in the buildings of nearby farmsteads. The woodland edge has an interface with tall semi-improved grassland, and moderate-good invertebrate populations are predicted to occur in these areas.

Invertebrates are the food source of British bats and the woodland edges provide sheltered foraging conditions and potential commuting routes between roosts present in buildings locally, and the wider countryside.

2.7 GREAT CRESTED NEWT:

2.7.1 Great Crested Newt Evaluation:

There are no ponds on the site and reference to Ordnance Survey maps and online aerial photographs indicate that there are no ponds within 400m of the site. In addition, the NBN Atlas data search returned no records of GCN within 2km.

Therefore, there are no potential impacts generated on GCN or its habitat resulting from the proposals for the site.

2.8 WATER VOLE:

2.8.1 Water Vole Survey:

The dry ditch on the site was subject to a standard search for signs of water vole occupation. The ditch is isolated by great distance from other waterbodies and was entirely dry during the survey, however, seasonal wetting is likely to occur during periods of heavy rain, particularly during winter.

No sign of current or historical occupation by water vole was found during the survey, and conditions are considered to be highly sub-optimal due to the prolonged absence of water which is predicted to occur annually.

The NBN Atlas data search returned no records of water vole within 2km of the site.

PART 3 ECOLOGICAL EVALUATION & RECOMMENDATIONS:

3.1 EVALUATION OF SURVEY FINDINGS:

The following section evaluates the site in relation to statutory/non-statutory sites, protected species and species/habitats listed under Section 41 Species/Habitats of Principal Importance in England (NERC) Act 2006.

3.1.1 Statutory Sites:

The site forms part of the Forest of Bowland AONB.

The MAGIC data has revealed that there is one Site of Special Scientific Interest (SSSI) approximately 400m west of the site. The SSSI is Standridge Farm Pasture.

In addition to the above, there are no SSSIs within 1km but there are four within 2km of the proposal site boundary. These include, Barn Gill Meadow, Bell Sykes Meadows, Field Head Meadow and Langcliffe Cross Meadow.

In addition, the Bowland Fells Special Protection Area (SPA) is located approximately 4.6km north of the site, and the North Pennine Dales Special Area of Conservation (SAC) 2km from the site.

The presence of SSSI/SPA/SACs within near vicinity of the site generates a requirement for further evaluation in respect of the risk of impacts arising from the proposal.

Therefore, Natural England's SSSI Impact Risk Zones (IRZ) Guidance was also consulted in relation to this project.

The SSSI IRZs can be used by Local Planning Authorities, developers and consultants in relation to planning applications, *'The Impact Risk Zones (IRZs) are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts. The IRZs also cover the interest features and sensitivities of European sites, which are underpinned by the SSSI designation and "Compensation Sites", which have been secured as compensation for impacts on Natura 2000/Ramsar sites.'**

*SSSI Impact Risk User Guidance - see www.magic.gov.uk

The list of development categories and associated potential risks are as follows.

GUIDANCE – How to use the Impact Risk Zones

1. DOES PLANNING PROPOSAL FALL INTO ONE OR MORE OF THE CATEGORIES BELOW?

2. IF YES, CHECK THE CORRESPONDING DESCRIPTION(S) BELOW. THE LPA SHOULD CONSULT NATURAL ENGLAND ON LIKELY RISKS FROM THE FOLLOWING:

All Planning Applications

Not applicable.

Infrastructure

Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals.

Wind & Solar Energy

Not applicable.

Minerals, Oil & Gas

Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.

Rural Non Residential

Not applicable.

Residential

Residential development of 100 units or more.

Rural Residential

Any residential development of 50 or more houses outside existing settlements/urban areas.

Air Pollution

Any development that could cause AIR POLLUTION (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons/manure stores).

Combustion

All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

Waste

Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management.

Composting

Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management.

Discharges

Any discharge of water or liquid waste of more than 5m³/day to ground (i.e. to seep away) or to surface water, such as a beck or stream (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).

Water Supply

Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .

Using the IRZ guidance outlined above, the proposals fall into the 'Air Pollution' category of the IRZ criteria.

It should be noted that air quality issues are beyond the scope of this study, therefore the LPA should seek appropriate guidance in this matter should they consider it to be required.

3.1.2 Biological Heritage Sites:

The owners confirm that the site is not a Biological Heritage Site (BHS) and that there are no BHSs within the farm holding.

The area affected by the proposals fails to meet any of the habitat guidelines for selection associated with the Lancashire BHS scheme.

All of the habitats found on site are common on a local-national scale.

3.1.3 Protected Species:

Bats:

There are no trees on or immediately adjacent to the site that have bat roost potential, and roost potential is rated as 'negligible' in all trees surveyed.

Substantial foraging opportunities exist along the edge of the plantation woodland. The same areas might also be used as commuting routes by bats locally.

Badger:

There are no badger setts on site and there is no evidence of badger foraging on site or runs entering the site through boundaries.

Breeding Birds:

No nesting birds were recorded on the site, however, curlew were observed flying over site and possibly use the site for foraging, but the nest sites are estimated to be >150m to the north and west of the site, and beyond the northern boundary of the farm holding

Curlew is a S41 species and red-listed.*

*See *Birds of Conservation Concern 4: The Red List for Birds*. RSPB et al.

Common birds of 'local' value might use the woodland and scattered trees as nest sites, although none were observed during the survey.

Great Crested Newt:

There are no potential GCN breeding sites within 400m of the site, therefore the species is considered to be absent in the local area.

Water Vole:

No evidence of current or historical occupation by water vole was found in the ditch on the site and conditions are considered to be unsuitable for the species

3.1.4 Section 41 (S41) Habitats and Species of Principal Importance in England Natural Environment and Rural Communities (NERC) Act 2006:

The marshy grasslands have an affinity with the Section 41 Habitat 'Purple Moor-grass and Rush Pastures'.

Despite the presence of S41 habitats, these grasslands are common on a local-national scale.

Curlew is S41 species and breeds off-site.

3.1.5 Habitats General:

The grasslands display significant levels of agricultural improvement, which has limited the floristic diversity of the swards, and the habitats present on the site have 'low-moderate' species diversity overall.

In addition, the floristic interest present is patchy and inconsistent, partly as a result of the 'improvement', but also on account of the general dominance of soft-rush.

The woodland is immature and planted, and typical of its age, displays little 'naturalness'.

Collectively, the habitats are of 'local' i.e. Parish value.

3.2 RECOMMENDATIONS:

3.2.1 Habitats:

The proposed works will directly affect semi-improved poor and marshy grasslands, and possibly a small group of immature trees.

No further habitat surveys are recommended, however, any site restoration should reflect the grassland habitats affected.

3.2.2 Badger:

There was a total absence of any evidence of activity that could be associated with badger on the site. Therefore, no further survey or precautions in respect of badger are recommended.

3.2.3 Birds:

Small numbers of common birds might breed in the trees on the site. In addition, ground-nesting birds might nest on the periphery of the site where the overbearing presence of tall trees diminishes. Surveys in spring/summer are considered unlikely to reveal any population greater than site-local significance, therefore additional surveys are not recommended.

To avoid impacts on nesting birds, if any of the trees/shrubs need to be removed, then this must be done outside of the bird breeding season during September-February. Removal in the period March-August must not be undertaken unless an ecologist has inspected the site and deemed the vegetation to be clear of nesting birds.

3.2.4 Bats:

Potential Roosts:

No potential roost sites were identified during the survey, and no constraints applied to the survey.

Therefore, no further surveys or inspections in respect of bats are required prior to felling.

Foraging and Commuting Routes:

The woodland-edge provides potentially valuable bat foraging/commuting routes for bats locally.

Precautions required on site relate to lighting control, as the effects of lighting if inappropriately designed/located, is also likely to generate adverse impacts on bats.

In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of lamps has to a range of insects; the other is the presence of lit conditions. Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. In mainland Europe, in areas where there are foraging or

'commuting' bats, stretches of road are left unlit or lighting is designed in such a way as to avoid isolation of bat colonies.'^{*}

^{*}*Bats and lighting in the UK- bats and the built environment series.* Bat Conservation Trust.

Therefore, a simple lighting plan must be produced to ensure that potential impacts generated by light spillage into bat-sensitive areas are minimised.

The broad advice in respect of lighting is to avoid lighting the woodland edge habitat, and to employ passive infrared sensor (PIR) lighting systems, to limit the amount of light spillage into potentially sensitive areas.

If permanent lighting is essential, then bollard lighting, or wall-mounted lighting with cowls to direct light downwards should be employed.

If lighting is controlled on the site in this way, then bats will be able to continue using the site in much the same way as they might do at present.

An outline of potential impacts on bats generated by lighting, and a number of considered solutions to the potentially adverse effects of inappropriate lighting on foraging/commuting bats is provided below.

The following table summarises the relative impacts of light types on bats.[†]

High Negative Impact	• Broad spectrum lights (particularly blue-white light) with high UV. • Metal halide and mercury. • Uplights - which light above the horizontal plane, illuminating trees and foraging habitat.
Medium Negative Impact	• Broad spectrum lights with low/no UV. • White LED, high pressure sodium.
Low Negative Impact	• Narrow Spectrum Lights with no UV content. • Low pressure sodium and warm white LED.* • Directional downlights - illuminating below the horizontal plane which avoid light trespass into the environment. * low relative attractiveness for insects compared to white light and therefore minimal impact on bats insect prey (Eisenbeis 2009).

[†]Bats and Lighting - Overview of Current Evidence and Mitigation. E.L. Stone. Bat & Lighting Research Project - University of Bristol.

The following guidance is appropriate in respect of bats and can be used to form the basis of a lighting plan.

Type of lamp (light source)

The impact on bats can be minimised by the use of narrow spectrum lights with no UV content including low pressure sodium lamps and warm white LED.

Luminaire and light spill accessories

Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire itself and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

Man-made features that are required within the build can be positioned so as to form a barrier.

Lighting column

The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill.

For pedestrian lighting this can take the form of low level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

Predicting where the light cone and light spill will occur

There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

Light levels

The light should be as low as guidelines permit. If lighting is not needed, don't light.

Timing of lighting

The times during which the lighting is on should be limited to provide some dark periods. Roads or track ways in areas important for foraging bats should contain stretches left unlit to avoid isolation of bat colonies. These unlit stretches should be 10m in length either side of commuting route.

Habitat Creation:

All of the potential bat foraging/commuting routes will be retained on site, therefore the creation of new foraging sites is not required.

3.2.5 Great Crested Newt:

GCN are considered to be absent on site which is isolated from all waterbodies within 400m of the proposal boundary. Therefore, no further surveys or precautions are recommended.

3.2.6 Water Vole:

Water vole was found to be absent during the survey and no further surveys or precautions are recommended.

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4.1 REFERENCES:

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APPENDIX:

Map 1: Extended Phase 1 Habitat Map

