2023 Updated Preliminary Ecological Appraisal of land off School Road, Elmswell, Suffolk, IP30 9EH

Cotswold Wildlife Surveys

18th April 2016, 29th March 2017, 9th March 2021, 15th March 2022 and 17th March 2023

QUALITY CONTROL

Date	Version	Name
18.04.16 29.03.17 09.03.21 15.03.22 17.03.23	Site walkovers	Andy Warren – BSc (Hons), MA (LM), Tech Cert (Arbor A), MCIEEM, TechArborA Director
25.11.23	Report prepared	Andy Warren – BSc (Hons), MA (LM), Tech Cert (Arbor A), MCIEEM, TechArborA Director
25.11.23	Checked	Caroline Warren – BSc (Hons) Director
25.11.23 28.11.23 29.11.23	01 reviewed and issued 02 issued 03 issued	Andy Warren – BSc (Hons), MA (LM), Tech Cert (Arbor A), MCIEEM, TechArborA Director

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Every reasonable attempt has been made to comply with BS42020:2013 *Biodiversity – Code of practice for planning and development*, *CIEEM Guidelines for Ecological Report Writing* (CIEEM, 2017) and Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition, Collins, 2023). If there has been deviation from recognised practice, justification/explanation has been given.

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SUMMARY

On land off School Road in Elmswell, Suffolk, planning permission is being sought for the development of the site.

In March 2016, Cotswold Wildlife Surveys was instructed to carry out a Preliminary Ecological Appraisal of the site. This was undertaken to determine the presence of any important habitats or species which might be impacted on by potential development of the site.

A search of the ecological data for the area revealed a number of records of Protected, UK Biodiversity Action Plan (UKBAP) and Local Biodiversity Action Plan (LBAP) species from within a 2.0 km radius of the site.

On the site itself, towards the southern end, there was a record of a Common Pipistrelle bat *Pipistrellus pipistrellus* in 2001, whilst small numbers of Common Pipistrelles (maximum 5) and two Brown Long-eared Bats *Plecotus auritus* were recorded 420 m to the east-northeast during nocturnal surveys in June 2011 and May 2012.

Other mammals included Brown Hare *Lepus capensis* in 1990 and Hedgehog *Erinaceus europaeus* in 1994, 1995 and 1996, the closest 250 m to the southeast in the village.

A wide variety of bird were noted in the area, including several ground nesting farmland species such as Grey Partridge *Perdix perdix*, Lapwing *Vanellus vanellus*, Curlew *Numenius arquata* and Skylark *Alauda arvensis*. In addition, a Barn Owl *Tyto alba* was observed northeast of the mainline railway in May 2012.

A small population of Slow-worms *Anguis fragilis* was noted on land northeast of the railway line in May/June 2011 and June 2012, along with a small population of Great Crested Newts *Triturus cristatus*, the latter discovered in a pond 287 m to the north-northeast of the application site.

The railway line is considered to be a significant barrier to the dispersal of Slow-worms and Great Crested Newts, and despite their relatively close proximity, they are considered to be absent from the application land.

There was one statutory site within 2.0 km of the survey area; Norton Wood Site of Special Scientific Interest (SSSI). Located 0.5 km to the west-northwest, on the opposite side of a mainline railway, the SSSI consists of ancient woodland with some secondary woodland.

The ground flora includes several uncommon plants, and a characteristic flora has developed on a series of wide rides.

Two non-statutory local nature reserves were also within the 2.0 km of the survey area; Luke's Wood 100 m away and Kiln Meadow 600 m away. Luke's Wood is a newly planted woodland with a pond and mature trees, whilst Kiln Meadow is a pond, woodland, and developing wildflower meadow.

Connectivity with all the above sites is very limited. The SSSI lies the other side of a mainline railway, and is further separated by arable land under continuous cultivation. Although Kiln Meadow and Luke's Wood are closer to the southeastern boundary of the application site, they are separated by busy local roads and residential areas.

Phase 1 Habitat Surveys took place on 18th April 2016 and 29th March 2017, in dry and mild conditions, with a southwesterly wind. An updated survey was carried out on 9th March 2021, in cool and dry conditions, with light cloud, partial sun and a mostly light west-northwesterly wind. Further updates were undertaken on 15th March 2022 and 17th March 2023, the former in warm sunny weather with no wind, and the latter in overcast, drizzly conditions with a light southwesterly wind.

The application site consists of a single large field of arable land under continuous cultivation. Parnell Lane and School Road lie to the east, with a stream contained in a steep-sided ditch running along the western boundary. To the north lies a mainline railway, and to the south, on top of the hill, there is St John's Church and Church Lane.

A small part of the stream at the northern end is overgrown with dense Bramble *Rubus fruticosus* scrub, whilst Parnell Lane is lined with planted Horse Chestnut *Aesculus hippocastanum* trees. There are also two Pedunculate Oak *Quercus robur* trees, one growing next to the stream and the other lying next to School Road. None of the trees will be affected by the proposed scheme.

Two of the habitat types noted are documented in the Suffolk Planning LBAP (2012) as 'Priority Habitats' for the county under the sections 'Rivers and Streams' and 'Arable Field Margins'. These were the stream and the adjoining field margins respectively.

Despite the presence of these priority habitats, the land is poor in floristic diversity, with no rare vascular plants recorded, and all species common and widespread. There are no invasive or notifiable species.

In total 31 species of birds were observed during the surveys between April 2016 and March 2023.

Of these five are Species of High Conservation Concern (RSPB Red list); Skylark *Alauda arvensis*, Grey Wagtail *Motacilla cinerea*, Starling *Sturnus vulgaris*, Linnet *Linaria cannabina* and Yellowhammer *Emberiza citrinella*.

Another six are Species of Medium Conservation Concern (RSPB Amber list); Kestrel *Falco tinnunculus*, Lesser Black-backed Gull *Larus fuscus graellsii*, Stock Dove *Columba oenas*, Dunnock *Prunella modularis*, Pied Wagtail *Motacilla alba yarrellii* and Reed Bunting *Emberiza schoeniclus*.

The rest are all Species of Low Conservation Concern (RSPB Green list).

Skylark, Starling, Dunnock, Linnet, Yellowhammer and Reed Bunting are also documented in the Suffolk Planning LBAP (2012) as 'Priority Species' for the county.

No in-use or old bird's nests were found, but the trees, scrub and ground cover did provide some potentially suitable habitat for nesting.

Since all in-use bird's nests and their contents are protected from damage or destruction, any ground cover, tree and scrub removal should be undertaken outside the period 1st March to 31st August inclusive. If this time frame cannot be avoided, a close inspection of the ground cover, trees and scrub to be removed will be undertaken prior to clearance. Work will not be carried out within a minimum of 5.0 metres of any in-use nest, although this distance could be more depending on the sensitivity of the species. Any in-use nest will be allowed to fledge before it is disturbed.

The proposed development is unlikely to lead to the loss of potential bird nesting sites, as the trees and scrub are to be retained, along with the majority of the field, the latter to be enhanced for wildlife.

The two Pedunculate Oak supported features such as decay cavities, woodpecker holes, fissures and exfoliating bark, that would be considered suitable for bat roosting and/or hibernation. These are being retained.

Most of the site is thought to be of low value to foraging or commuting bats, as the trees provided some cover, but there was little vegetation to attract prey items. It is thought more likely that any bats, if present, would utilise buildings, trees and vegetation just outside the site boundaries.

There were no signs of Badger *Meles meles* activity within the survey area, but there was a large Rabbit *Oryctolagus cunniculus* warren just south of the site.

Despite the relatively close proximity of the Great Crested Newt population, the site was considered unsuitable for the species, as there were no permanent still water or other wetland features, minimal foraging habitat, and no hibernacula or refugia.

However, both Common Toad *Bufo bufo* and Common Frog *Rana temporaria* were recorded during the 2016 survey, along with frog spawn in the stream. There have been no signs of amphibians between 2017 and 2023, although they may still be present in low numbers.

There is negligible potential for reptiles to be present on the site, as there are no refugia or hibernacula, and limited basking and foraging areas.

Along the stream banks of the western field there were signs of Water Vole *Arvicola amphibius* activity in 2016 and 2021.

In particular, there were several holes in the steep banks of the ditch and nearby grassy banks, as well as evidence of tunnelling and latrines. The Water Vole is documented in the Suffolk Planning LBAP (2012) as a 'Priority Species' for the county.

Full surveys for Water Voles were subsequently carried out along the whole length of the stream in March 2022 and March 2023. No evidence of recent Water Vole activity was found, and it was concluded that the species is no longer present.

Irrespective of this, the proposed development will not impact on Water Voles, as only a relatively small area of the field will be developed, with a wide buffer of open space against the stream. The position of the proposed outfall for surface water discharge has also been carefully designed to ensure that no old Water Vole burrows are affected.

It was also possible to assess the potential importance of the habitats within the application site to invertebrates.

Since the majority of the site was agricultural land under continuous cultivation, it was concluded that there was low potential for invertebrate assemblages, in particular those species listed as a priority in the UK Biodiversity Action Plan and/or Local Biodiversity Action Plan. Indeed, only a few insects were noted during the site surveys, including Small Tortoiseshell *Aglais urticae* and Peacock *Inachis io* butterflies, and Bumblebee *Bombus spp.*

If excavations are to be undertaken, it should be noted that open trenches could potentially trap wildlife, especially if these fill up with water. If trenches cannot be infilled immediately then they will either be covered overnight or escape routes will be provided. These can be in the form of branches or boards placed on the bottom of the trench, with their upper ends above ground level and touching the sides, or sloping ends left in trenches.

Care will also be taken at all times during any vegetation removal and topsoil stripping as small mammals and common amphibians could be present. Any small mammals or common amphibians disturbed or uncovered will either be caught by hand and relocated to a safe area, or left to vacate the work site in their own time.

The proposal provides an opportunity for significant biodiversity enhancements. These will include the creation of a large wildflower meadow over the remainder of the field not being developed, the re-opening of a currently culverted small watercourse that runs into the stream, planting of native trees and shrubs and the creation of broadleaved woodland along the northern and southern boundaries, provision of an attenuation feature that will be seasonally wet and planted with tree and shrub species tolerant of damp conditions, the creation of a community orchard, and the planting of native species rich hedgerows.

1. INTRODUCTION

1.1 Background and survey objectives

In March 2016, Cotswold Wildlife Surveys was instructed by Richard Brown Planning, on behalf of their client Christchurch Land and Estates (Elmswell South) Limited, to carry out a Preliminary Ecological Appraisal of land off School Road in Elmswell, Suffolk. This was undertaken to determine the presence of any important habitats or species which might be impacted on by potential development of the site.

Phase 1 Habitat Surveys took place on 18th April 2016 and 29th March 2017, in dry and mild conditions, with a southwesterly wind. An updated survey was carried out on 9th March 2021, in cool and dry conditions, with light cloud, partial sun and a mostly light west-northwesterly wind. Further updates were undertaken on 15th March 2022 and 17th March 2023, the former in warm sunny weather with no wind, and the latter in overcast, drizzly conditions with a light southwesterly wind.

A search of the ecological data for the area revealed the presence of a one statutory and two non-statutory nature conservation sites within a 2.0 km radius of the site, along with a number of records of Protected Species, Section 41 species and Biodiversity Action Plan priority species.

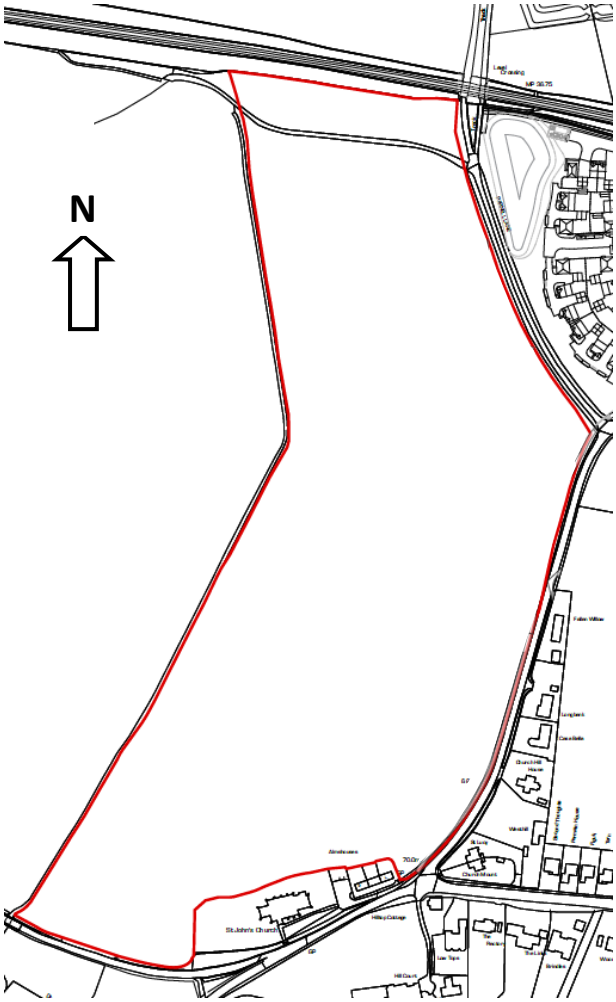
1.2 Site description

The application site (Plan 1 overleaf) consists of a single large field of arable land under continuous cultivation for cereals.

Parnell Lane and School Road lie to the east, with a stream contained in a steep-sided ditch running along the western boundary. To the north lies a mainline railway, and to the south, on top of the hill, there is St John's Church and Church Lane.

The steep-sided ditch is quite deep and overgrown with tall ruderal vegetation in places. Species noted include Common Nettle *Urtica dioica* and Great Willowherb *Epilobium hirsutum*. Scattered scrub of Elder *Sambucus nigra*, Hawthorn *Crataegus monogyna* and Bramble *Rubus fruticosus* is also present, predominantly at the northern end. Near the southern end of the ditch there is a mature, Ivy-clad *Hedera helix* Pedunculate Oak.

Along the stream bed there are clumps of emerging Great Willow-herb, abundant Fool's Watercress *Apium nodiflorum*, and a blanketweed species *Spirogyra sp*.



Plan 1 Site boundary

An uncultivated margin of around five metres in width runs inside the entire western boundary of the field next to the ditch. This is characterised by grasses such as Cocksfoot *Dactylis glomerata* and Meadow Fescue *Festuca pratensis*, along with forbs including White Dead-nettle *Lamium album*, Red Dead-nettle *L. purpureum*, Common Cleavers *Galium aparine*, Hogweed *Heracleum sphondylium*, Yarrow *Achillea millefolium*, Ivy-leaved Speedwell *Veronica hederifolia*, and Dove's-foot Cranesbill *Geranium molle*.

The southern boundary of the field borders onto Church Lane, this consisting of a grassy roadside bank which had been closely stimmed in March 2021 with the field cultivated up to this bank.

The boundary, characterised by a thin species poor grassy strip, continues south of the parish church and almshouses to School Road. Here there is some encroachment of vegetation such as Dog Rose *Rosa canina*, Ivy and Elder from the churchyard onto the field edge.

The entire length of the School Road boundary consists of a species poor narrow grassy strip (about one metre width) with a well-worn earth path (around one to one and a half metres width) inside the site boundary up to Parnell Lane.

Two rows of semi-mature Horse Chestnut trees run along both sides of Parnell Lane, beneath which are species poor grassy strips containing species such as Sweet Violet *Viola odorata*, Dandelion *Taraxacum officinale*, and Daisy *Bellis perennis*.

The northern boundary of the field consists of a species poor grassy strip between a well-worn earth footpath and the boundary fence of the railway embankment.

The Ordnance Survey Grid Reference is TL 98268 63842, centred on the middle of the field.

1.3 Proposed works

It is planned to develop the site as a retirement village, this comprising a 66 bedroom care home and 40 no. care or assisted living bungalows and ancillary accommodation (Plan 2).

Plan 2 Illustrative Masterplan

2. METHODOLOGY

2.1 Desk study

A detailed desk study was undertaken to determine the nature conservation designations and protected species that had been recorded within a 2.0 km radius of the site. This involved contacting statutory and non-statutory organisations, and then assimilating and reviewing the data provided.

The consultees for the desk study were:

- Multi Agency Geographic Information (MAGIC) website www.magic.gov.uk;
- National Biodiversity Network Gateway website;
- Suffolk Biodiversity Information Service;
- Suffolk Coastal District Council planning website.

2.2 Habitat survey

A Preliminary Ecological Appraisal was carried out across the whole of the survey site. It was conducted using standard JNCC (2003) techniques and methodologies.

Phase 1 Habitat Surveys took place on 18th April 2016 and 29th March 2017, in dry and mild conditions, with a southwesterly wind. An updated survey was carried out on 9th March 2021, in cool and dry conditions, with light cloud, partial sun and a mostly light west-northwesterly wind. Further updates were undertaken on 15th March 2022 and 17th March 2023, the former in warm sunny weather with no wind, and the latter in overcast, drizzly conditions with a light southwesterly wind.

2.3 Protected species survey

During the surveys the potential for other protected and important species was assessed. This included European Protected Species, legally protected species and Local Biodiversity Action Plan Species (and habitats).

2.3.1 Badgers

Badgers are generally nocturnal and evidence of their presence in an area often comes from field signs rather than sightings of the animals. Useful field signs include:

- Setts (main, outlying, annex or subsidiary)

- Tufts of hair caught on barbed wire fences;
- Conspicuous Badger paths;
- Footprints;
- Latrines – small excavated pits in which droppings are deposited;
- 'Snuffle holes' – small scrapes where Badgers have searched for insects and plant tubers;
- Day nests – bundles of grass and other vegetation where Badgers may sleep above ground;
- Scratch marks on trees (usually near the sett).

Daytime surveys looking for field signs can be carried out at any time of the year, and should be non-intrusive, but nocturnal surveys of setts (if required), are only likely to be effective from April to November, when Badgers are most active, and any cubs present will have emerged.

Main setts

These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. They usually have well used paths to and from the sett and between sett entrances. Although normally the breeding sett is in continual use, it is possible to find a main sett that has become disused because of excessive digging or for some other reason, in which case it is recorded as a disused main sett.

Annex setts

These are always close to a main sett, usually less than 150 m away, and are usually connected to the main sett by one or more obvious, well worn paths. They consist of several holes, but are not necessarily in use all the time, even if the main sett is very active.

Subsidiary setts

These often these have only a few holes, are usually at least 50 m from a main sett, and do not have an obvious path connecting them with another sett. They are not continuously active.

Outlying setts

These usually only have one or two holes, often have little spoil outside the hole, have no obvious path connecting them with another sett, and are only used sporadically. When not in use by badgers, they are often taken over by foxes or even rabbits.

However, they can still be recognised as badger setts by the shape of the tunnel (not the entrance hole), which is at least 250 mm in diameter and rounded or flattened oval in shape.

A search for evidence of Badger presence on site was undertaken as part of the Preliminary Ecological Appraisal.

2.3.2 Bats

In order to fully assess bat occupation of a particular site, the Bat Conservation Trust (2023) recommends that information gathered from a desk study of known bat records, and a daytime site walkover, is used to inform the type and extent of future bat survey work, potentially including nocturnal emergence surveys.

The preliminary roost assessment (PRA) is usually in the form of a diurnal walkover and can be carried out at any time of the year. It provides an opportunity to check for signs of bat occupancy and/or the suitability for bat roosting.

Evidence of bat activity includes droppings, scratch marks, feeding remains, carcasses, or even roosting animals, whilst suitability is determined by the type and number of potential roost features (PRFs) typically used by bats.

Roosting places vary depending on the species. Pipistrelles usually inhabit narrow cracks or cavities around the outside of buildings, but they will roost in similar niches inside larger barns. Typical sites include soffit spaces, gaps behind fascia boards and end rafters, crevices around the ends of projecting purlins, under warped or lifted roof and ridge tiles, or in gaps in stone and brickwork where mortar has dropped out.

Larger species such as Brown Long-eared Bats *Plecotus auritus*, Myotis bats (Natterer's *Myotis nattereri* and Whiskered/Brandt's *M. mystacinus/M. brandtii*), and Lesser Horseshoes *Rhinolophus hipposideros*, like to roost in the roof voids of buildings, and can often be found hanging singly or in small groups from ridge boards or roof timbers, especially where these butt up against gable walls or chimney breasts. They especially favour older structures with timber frames. Here they squeeze into tight crevices making them difficult to observe.

Where bats are found, or there is evidence of bat occupation or activity, i.e. that bat use is confirmed, a roost characterisation survey is undertaken. The results are used to inform the impact assessment and design of mitigation measures. Roost characterisation includes nocturnal emergence surveys, unless sufficient information has already been collected using robust survey methods with no significant constraints.

Nocturnal emergence surveys allow numbers and species of bats to be confirmed, and should only be undertaken when bats are out of hibernation and in their summer roosts.

The bat active period is generally considered to be between April and October, although particularly cold weather will affect the level and extent of bat activity. Indeed, the air temperature at the start of each survey should be at least 10°C or above, with no strong wind or heavy rain. The survey starts 15 minutes before sunset and continues for one and a half to two hours after sunset.

Visits will be a minimum of three weeks apart, and the number of surveys and timing is dependent on the evidence found or the suitability of the site to bats. This will be determined by the ecologist. In general, at least two emergence nocturnal surveys will be carried out, but a third visit may be necessary if the results are inconclusive or further information is required.

Nocturnal emergence surveys are also used to determine the presence or absence of bats, where signs of bat activity are indeterminate or absent but the suitability for bat roosting is considered to be low, moderate or high.

For a site with no evidence but low suitability, just one nocturnal emergence survey is required, this to be in the period May to August.

For moderate suitability a minimum of two visits are needed between May and September, of which one must be in the period May to August.

With high suitability, three visits will be necessary between May and September, of which two must be in the period May to August.

Where there is no evidence of bat presence, and no suitability for roosting, no nocturnal surveys will be needed.

The number of surveyors and/or the use of night vision aids (NVAs) is determined by the ecologist, and is dependent on the complexity of the structure. For simple structures just one surveyor using an appropriate number of NVAs will be sufficient, but for larger sites and/or more complex or irregularly shaped structures, e.g. those with multiple elevations and/or roof slopes, more surveyors will be required.

With no buildings or other structures on the site, a thorough inspection of the trees from the ground was made by Andy Warren (Natural England bat licence No. 2015-16489-CLS-CLS).

10x40 Nikon binoculars and a Fenix TK75 high powered torch were used for the inaccessible/unreachable areas. On this occasion an endoscope was not used, as there were no crevices and cavities that could not be inspected with a torch or by use of binoculars.

2.3.3 Birds

Most resident and migrant birds breed in the spring and summer, although Woodpigeons *Columba palumbus* and Collared Doves *Streptopelia decaocto* nest throughout the year, and as a result could be on eggs in almost any month.

In season, signs of breeding include singing males, display and copulation, birds gathering nesting materials, adults carrying food, calling chicks, etc.

In winter, none of these activities may be occurring, so a survey for old nests and/or nest holes is the most reliable method of determining the presence or absence of breeding birds.

This was carried out during the Preliminary Ecological Appraisal, along with a general site walkover to identify the presence of foraging birds.

2.3.4 Great Crested Newts

A survey for Great Crested Newts (GCN) may be indicated when background information on distribution suggests that they may be present. More detailed indicators are:

- *Any historical records of Great Crested Newts on the site or in the general area;*
- *A pond on or near the site (within around 500 m), even if it holds water only seasonally;*
- *Sites with refuges (such as piles of logs or rubble), grassland, scrub, woodland or hedgerows within 500 m of a pond*.

There are several field survey methods which can be employed depending on the time of year:

- *Bottle or funnel trapping – adults ideally February to May, with June and July sub-optimal, and August to September for detection of larvae (i.e. young);*
- *Egg search – April to June ideally, with March and July sub-optimal;*
- *Torch survey – March to May for adults, with February and June to July sub-optimal, and August to September for larvae;*
- *Netting – March to May for adults, with February and June to July sub-optimal, and August to September for larvae;*
- *Pitfall trapping – March to May and September for adults, with February, June to August and October sub-optimal;*

- *Refuge search – April to September ideally, with March and October sub-optimal.*

The latter two methods involve terrestrial habitats, the others aquatic habitats, for which a minimum of 4 visits per year are recommended, with at least 2 visits between mid-April and mid-May to record peak numbers (English Nature, 2001).

Although there is a small population of Great Crested Newts in a pond 287 m to the north-northeast of the application site, this lies on the opposite side of the railway line and Parnell Lane. These two features, in combination with the continuous cultivation of the application site, are considered to be a significant barrier to the dispersal of newts onto the site, and the species is assumed to be absent.

2.3.5 Otters

Otters are nocturnal and are active all year round. They are large with an adult male reaching up to 1.2 m from nose to tail, and weighing about 10 kg.

Feeding mainly on fish and amphibians, Otters live by undisturbed waters where there is plenty of cover, mostly by freshwater lakes, rivers and quiet small streams as well as some coasts.

An Otter may use over 40 km of river and needs many resting places throughout this range. A female otter will give birth to 1 to 3 cubs in a natal holt, which is often away from the main river and must be completely undisturbed.

Field signs include:

- Prints in soft mud;
- Spraints (faeces);
- Holts.

A search for evidence of Otter presence on site was undertaken as part of the Preliminary Ecological Appraisal, and at the same time as surveys for Water Voles in March 2022 and March 2023.

2.3.6 Reptiles

Commoner reptiles which may be encountered in rural areas include Grass Snake, Slow-worm, and Common Lizard.

During the winter months, from mid-October to late February or early March, they are in hibernation.

Typically they are deep in underground hibernacula, such as holes and cracks in the ground, among rocks or the roots of large trees, down animal burrows, or in piles of rubble or stone.

In the spring and summer they live above ground in well-vegetated places, with Grass Snakes often near or in water. Being cold-blooded all reptiles like to bask, and can often be found in open places.

There are very few signs of reptile presence, but these include:

- Shedded skin (snakes);
- Eggs (but not Common Lizard which gives birth to live young).

All potential refugia on site were checked where possible as part of the Preliminary Ecological Appraisal.

2.3.7 Water Voles

The Water Vole is the largest of the British voles. It lives in a series of holes or burrows at the water's edge and can be found along the banks of ditches, streams, rivers, lakes and canals.

Although Water Voles live in colonies, the breeding females are territorial, each defining their contiguous territory with latrines during the breeding season. This lasts from March to October.

The Water Vole is herbivorous, feeding primarily on the lush aerial stems and leaves of waterside plants. Its activity is normally confined to the area within two metres of the watercourse, the bankside vegetation in this area not only essential for food, but also for cover from predators.

Water Vole activity can be assessed by looking for the following signs:

- Burrows;
- Faeces and latrines;
- Feeding stations;
- Runs;
- Paw prints in areas of soft mud;
- Feeding 'lawns';
- Predator field signs.

A search for evidence of Water Vole presence on site was undertaken as part of the Preliminary Ecological Appraisal.

More detailed surveys were subsequently undertaken on 15th March 2022 and 17th March 2023. These involved walking the full length of the stream from the northern end to Church Lane in the south. The easiest way to do this was to walk along the stream bed itself, as this gave unrestricted access to both banks.

3. RESULTS

3.1 Desk study

3.1.1 Designated sites

Statutory sites

Within the 2.0 km search area there was one statutory site, this being Norton Wood SSSI. Located some 0.8 km to the west-northwest of the survey area, the SSSI is ancient woodland with some secondary woodland. The ground flora includes several uncommon plants such as Oxlip *Primula elatior*, a scarce species at the edge of its range. In Norton Wood a characteristic flora has developed on a series of wide rides.

Non-statutory sites

There were two non-statutory sites (local nature reserves) within the search area. The closest of these was Luke's Wood (1.62 hectares) 100 m from the southeastern boundary of S1. This is newly planted woodland with a pond and some mature trees, and is a 'community wildspace'.

Approximately 600 metres from the same boundary, was Kiln Meadow (2.02 hectares). A community nature reserve, this is managed on behalf of Anglian Water, and consists of a pond, woodland, and developing wildflower meadow.

Connectivity with all the above sites is very limited. The SSSI lies the other side of a mainline railway, and is further separated by arable land under continuous cultivation. Although Kiln Meadow and Luke's Wood are closer to the southeastern boundary of the application site, they are separated by busy local roads and residential areas.

3.1.2 Protected species

The ecological data revealed a number of records of Protected, UK Biodiversity Action Plan (UKBAP) and Local Biodiversity Action Plan (LBAP) species from within a 2.0 km radius of the site.

On the site itself, towards the southern end, there was a record of a Common Pipistrelle bat in 2001, whilst small numbers of Common Pipistrelles (maximum 5) and two Brown Long-eared Bats were recorded 420 m to the east-northeast during nocturnal surveys in June 2011 and May 2012.

Other mammals included Brown Hare in 1990 and Hedgehog in 1994, 1995 and 1996, the closest 250 m to the southeast in the village.

A wide variety of bird were noted in the area, including several ground nesting farmland species such as Grey Partridge, Lapwing, Curlew and Skylark. In addition, a Barn Owl was observed northeast of the mainline railway in May 2012.

A small population of Slow-worms was noted on land northeast of the railway line in May/June 2011 and June 2012, along with a small population of Great Crested Newts, the latter discovered in a pond 287 m to the north-northeast of the application site.

The railway line is considered to be a significant barrier to the dispersal of Slow-worms and Great Crested Newts, and despite their relatively close proximity, they are considered to be absent from the application land.

3.2 Habitat survey

3.2.1 Habitat descriptions

The following habitats were recorded across the site:

- Arable;
- Improved grassland;
- Running water;
- Scattered broadleaved trees;
- Tall ruderal vegetation;
- Dense scrub.

These habitats are described below and are shown on the Phase 1 Habitat Survey map in Appendix 1, with the target notes (where applicable) in Appendix 2.

Arable

The majority of the site comprised agricultural land under continuous cultivation for cereals (Figs. 1 and 2).

Figs. 1 & 2 Winter cereal in March 2021 (L) and March 2023 (R)

Improved grassland

There were narrow field margins (one to two metres wide) around most sides of the field, including alongside School Road (Fig. 3).

In addition, a margin of around 5 metres width ran along the entire western edge of the field adjacent to the boundary ditch/stream (Fig. 4).

Fig. 3 View N along School Road

Fig. 4 View N along stream

The margin and field edge strips were species poor. Examples of plant species recorded were Meadow Fescue, Cocksfoot, Common Cleavers, White and Red Dead-nettles, Broad-leaved Dock, Daisy, Dandelion, Creeping Buttercup, Lesser Celandine, Comfrey, Lords-and-Ladies, Ivy-leaved Speedwell, Common Mallow and Greater Stitchwort.

Running water

A stream ran along the entire western boundary of the field within a steep-sided ditch. The water was generally clear with a fairly strong flow at the times of the visits (Fig. 5). A culverted stream (Fig. 6) and two springs joined it from the northeast about halfway down. Along the stream bed was Great Willowherb, Fool's Watercress and a blanketweed species.

Figs. 5 & 6 Stream looking north in March 2023 (L) and culvert (R)

Scattered broadleaved trees

Along the western boundary of the field was a mature Pedunculate Oak smothered in Ivy (Fig. 7 – Target Note 1), with another mature Pedunculate Oak growing along the eastern boundary next to School Road (Fig. 8 – Target Note 2).

Figs. 7 & 8 Pedunculate Oak trees in March 2021

In 2021 it was noted that the oak in Fig. 8 had had some lower limbs removed up to around two metres above ground level, and especially over the grassy bank and inner path.

There were also two lines of semi-mature trees along the sides of Parnell Lane, all of which were Horse Chestnuts (Fig. 9).

Fig. 9 Horse Chestnut trees in March 2021

Although the application is only at the Outline stage, and thus the exact positions of infrastructure are still to be fully decided, it can be confirmed that the chestnuts will not be impacted on by the scheme.

The root protection areas of the biggest trees only extend up to 4.0 m in radius from the main stems, whilst the nearest construction will be at least twice that distance away.

Indeed, the trees will also be retained in a buffer of open space to ensure the root systems are unaffected and given room to grow as the trees mature.

This follows the guidance in BS5837:2012 *'Trees in relation to Design, Demolition and Construction – Recommendations'.*

The two oaks are similarly unaffected, with the one along the watercourse contained within an open wildflower meadow post-works, and the other lying next to School Road appropriately buffered against excavation.

Tall ruderal vegetation

Tall ruderal vegetation dominated by Common Nettle, Hogweed, Great Willowherb and Ground Elder, was present along the ditch, with some Bracken *Pteridium aquilinum* at the southern end (Fig. 10 overleaf).

Figs. 10 & 11 Bracken, tall ruderal vegetation and dense scrub in March 2022

Dense scrub

A section of the ditch at the northern end was filled with dense scrub consisting of Elder, Hawthorn and Bramble (Fig. 11).

3.2.3 Flora

The botanical composition of each habitat was typical, and all species recorded were common and widespread.

No rare vascular plants were found, and there were no invasive or notifiable species.

A list of species observed is presented in Appendix 3.

3.3 Protected species survey

3.3.1 Badgers

The site held very little habitat suitable for sett building, although some of the habitats were considered to be suitable for foraging purposes. Despite this, no evidence of Badger presence was recorded, such as setts, tufts of hair, pathways, footprints or latrines.

3.3.2 Bats

Two of the trees (one inside the site boundary) supported features potentially suitable for roosting and/or hibernating bats. These were two Pedunculate Oaks (Figs. 12 and 13 – Ref Target Notes 1 and 2).

Figs. 12 & 13 Pedunculate Oak trees with decay cavities (arrowed)

The majority site was thought to be of low value to foraging or commuting bats, as it was mostly arable land. The trees on site provided some cover, but there was little vegetation to attract prey items. Instead areas bordering the site were thought more likely to be used by bats, if present.

3.3.3 Birds

A total of 31 species of birds was observed during the visits. Of these five are Species of High Conservation Concern (RSPB Red list); Skylark, Grey Wagtail, Starling, Linnet, and Yellowhammer. Three of these were present on the site; Skylark, Grey Wagtail and Yellowhammer, and the other two were flyovers.

Another six are Species of Medium Conservation Concern (RSPB Amber list); Kestrel, Lesser Black-backed Gull, Stock Dove, Dunnock, Pied Wagtail and Reed Bunting.

Three of these were present on the site (Kestrel, Stock Dove and Reed Bunting), with two being flyover birds and the Dunnock singing from trees and scrub to the northwest.

Skylark, Starling, Dunnock, Linnet, Yellowhammer and Reed Bunting are also documented in the Suffolk Planning LBAP (2012) as 'Priority Species' for the county. Out of these a singing male Reed Bunting was noted in the vegetation along the stream in March 2021 as well as Skylarks singing overhead. These singing birds are indicative of territorial birds and potential breeding on or close to the site.

The other 20 species recorded are all Species of Low Conservation Concern (RSPB Green list). Out of these an active rookery (plus Jackdaws *Corvus monedula*) was noted north of the site at Elmswell Hall just over the railway line, and some of these birds were feeding on the site.

No old or in-use birds' nests were found, although the ground cover (including the margin and tall ruderal vegetation), trees and scrub did provide some potentially suitable habitat for nesting.

A full list of species noted is given in Appendix 4.

3.3.4 Great Crested Newts

In 2011, a small population of Great Crested Newts was discovered in a pond 287 m to the north-northeast of the application site, beyond the mainline railway. The railway line and Parnell Lane, in combination with the continuous cultivation of the application site, are considered to be a significant barrier to the dispersal of newts onto the site. Furthermore, the site is considered unsuitable for the species, as there are no permanent still water or other wetland features, minimal foraging habitat, and no hibernacula or refugia. As such, the species is assumed to be absent.

However, both Common Frog and Common Toad were seen in the stream in 2016, along with frog spawn (Fig. 14). The Common Toad is documented in the Suffolk Planning LBAP (2012) as a 'Priority Species' for the county.

Fig. 14 Frog spawn

No signs of frog or toad presence have been recorded since 2016.

3.3.5 Otters

No evidence of Otter was found during the surveys.

3.3.6 Reptiles

There was negligible potential for reptiles to be present on the site, as there were no refugia or hibernacula, and limited basking and foraging areas.

3.3.7 Water Voles

Along the stream banks in 2016, there were several signs of Water Vole activity. Burrows were noted upstream and downstream of the Pedunculate Oak, some on the water line with others higher up the bank (Figs. 15-18 – Target Notes 3 and 4).

Figs. 15 & 16 Water Vole holes

Figs. 17 & 18 Water Vole holes

A fresh latrine was also observed close to the water's edge in the same area (Figs. 19 and 20 – Target Note 5).

Figs. 19 & 20 Water Vole latrine – arrowed

The Water Vole is documented in the Suffolk Planning LBAP (2012) as 'Priority Species' for the county.

In March 2021, the burrows were again noted upstream and downstream of the Pedunculate Oak, along with latrines (Figs. 21-28 – Target Notes 7 to 11).

Figs. 21 & 22 Water Vole holes in March 2021

Fig. 23 Water Vole holes in March 2021

Fig. 24 Water Vole holes in March 2021

Figs. 25 & 26 Water Vole latrine in March 2021 – arrowed

Fig. 27 Water Vole hole (right) further latrine (left) in March 2021 – arrowed

Fig. 28 Water Vole latrine (same as above) in March 2021 – arrowed

In March 2022 and March 2023 further surveys for Water Voles were undertaken.

There was no evidence of recent Water Vole activity, although the previously recorded burrows were again noted, these now appearing to be abandoned.

However, there were abundant signs of Brown Rat *Rattus norvegicus* presence (Fig. 29), along with Rabbit burrows and droppings (Fig. 30).


Figs. 20 & 30 Brown Rat burrow (L) and Rabbit droppings (R)

It is considered likely that Water Voles are no longer present.

3.3.8 Invertebrates

Since the majority of the site was arable land under continuous cultivation, it was concluded that there was low potential for invertebrate assemblages, in particular those species listed as a priority in the UK Biodiversity Action Plan and/or Local Biodiversity Action Plan.

A few insects were noted during the site survey visits, including Small Tortoiseshell and Peacock butterflies and Bumblebee.

3.3.9 Other species

Rabbit activity was apparent around other parts of the field, with burrowing and droppings noted. A large warren was present to the south in the embankment along Church Lane.

Common Moles *Talpa europaea* were in evidence along the western margin of the field, where there were several mole hills.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Site evaluation

The application site was concluded to be of low wildlife interest.

The improved grassland in the field margins was of low wildlife interest, as the sward was not diverse in grasses or wildflowers, and was limited in extent, although it would hold some value for invertebrates, small mammals, and foraging birds.

The two trees both supported features suitable for roosting and/or hibernating bats, and these are being retained. The majority of the site is thought to be of low value to foraging or commuting bats, as it is mostly arable farmland with minimal cover. Indeed, it is thought more likely that any bats, if present, would utilise buildings, trees and vegetation just outside the site boundaries.

No evidence of breeding birds, particularly in the form of nests, was recorded on the land, although the trees, scrub and ground cover were considered to hold some potential for nesting birds.

There were several signs of Water Voles along the boundary steam in 2016 and 2021, but not in 2022 and 2023, and the species is now considered to be absent.

These is no evidence of Otters or Badgers, although there is Rabbit and Mole activity.

The site was considered unsuitable for Great Crested Newts or reptiles, despite the relatively close proximity of small populations of Great Crested Newts and Slow-worms on land to the north. However, both Common Toad and Common Frog were recorded during the 2016 survey, along with frog spawn in the stream. There have been no signs of amphibians between 2017 and 2023, although they may still be present in low numbers.

Since the majority of the site consisted of arable land under continuous cultivation, it was concluded that there was low potential for significant or notable invertebrate assemblages, in particular those species listed as a priority in the UK Biodiversity Action Plan and/or Local Biodiversity Action Plan.

It is considered that none of the designated sites will be impacted on by the proposed development, as there was no direct connectivity, and they were separated from the application site by intervening land use, including the mainline railway, agricultural land, and/or various roads, and some residential development.

4.2 Possible impacts of proposed work and recommendations

The proposed development will not impact on Water Voles if they are indeed still present, as the majority of the field will not be developed, just the northern end, with a wide buffer of open space against the stream. The position of the proposed outfall for surface water discharge has been carefully designed to ensure that no old Water Vole burrows are affected.

Although no birds' nests were found, since all in-use bird's nests and their contents are protected from damage or destruction, any ground cover, tree and scrub removal should be undertaken outside the period 1st March to 31st August inclusive. If this time frame cannot be avoided, a close inspection of the ground cover, trees and scrubs to be removed will be undertaken prior to clearance.

Work will not be carried out within a minimum of 5.0 metres of any in-use nest, although this distance could be more depending on the sensitivity of the species. Any in-use nest will be allowed to fledge before it is disturbed.

Despite the presumed absence of Great Crested Newts and reptiles, small mammals and common amphibians are present. As such care will be taken at all times during any vegetation removal and topsoil stripping. Any small mammals or common amphibians disturbed or uncovered will either be caught by hand and relocated to a safe area, or left to vacate the work site in their own time.

Furthermore, if excavations are to be undertaken, it should be noted that open trenches could potentially trap wildlife, especially if these fill up with water. If trenches cannot be infilled immediately then they will either be covered overnight or escape routes will be provided. These can be in the form of branches or boards placed on the bottom of the trench, with their upper ends above ground level and touching the sides, or sloping ends left in trenches.

4.3 Further surveys

If any tree, scrub or vegetation removal cannot be timed appropriately to avoid the bird nesting period (considered to be March to August inclusive), then further surveys of the trees and/or shrubs and/or vegetation to be removed will be required.

No other surveys are considered necessary.

4.4 Biodiversity enhancements

The proposal provides an opportunity for significant biodiversity enhancements. These will include the creation of a large wildflower meadow over the remainder of the field not being developed, the re-opening of a currently culverted small watercourse that runs into the stream, planting of native trees and shrubs and the creation of broadleaved woodland along the northern and southern boundaries, provision of an attenuation feature that will be seasonally wet and planted with tree and shrub species tolerant of damp conditions, the creation of a community orchard, and the planting of native species rich hedgerows.

Other measures will include a variety of bird and bat boxes erected on trees around the site boundaries, and the provision of log piles for amphibians, small mammals and invertebrates in the open space area along the western boundary.

4.5 Biodiversity Net Gain

Using the DEFRA BNG Metric 4.0, the biodiversity calculation results in a gain of 311.9%, with a 100% gain in hedgerow planting. A screen shot of the headline results is shown below.

Land off School Road, Elmswell

Headline Results

Return to results menu

Scroll down for final results ⚠

On-site baseline	*Habitat units*	23.26		
	Hedgerow units	0.00		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	95.81		
	Hedgerow units	8.11		
	Watercourse units	0.00		
On-site net change (units & percentage)	*Habitat units*	72.55	311.90%	
	Hedgerow units	8.11	0.00%	On-site net gain is less than target set ⚠
	Watercourse units	0.00	0.00%	
Off-site baseline	*Habitat units*	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%	
	Hedgerow units	0.00	0.00%	
	Watercourse units	0.00	0.00%	
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	72.55		
	Hedgerow units	8.11		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		

FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	72.55	
	Hedgerow units	8.11	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	311.90%	
	Hedgerow units	100.00%	
	Watercourse units	0.00%	
Trading rules satisfied?	Yes ✓		

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APPENDICES

Appendix 1: Phase 1 Habitat Survey Map

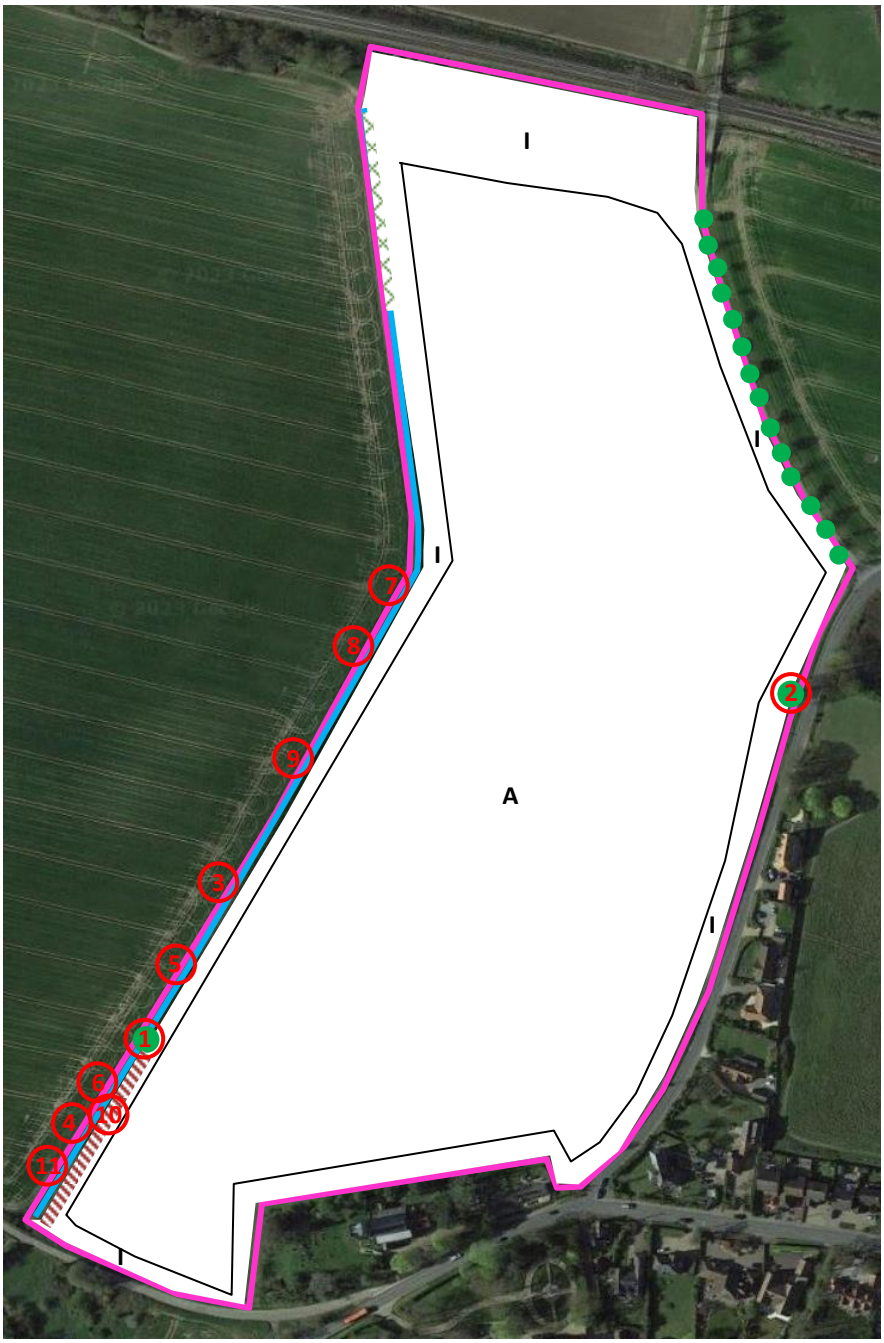
Appendix 2: Target Notes

Appendix 3: Plant species list

Appendix 4: Bird species list

Appendix 5: Relevant legislation

Appendix 1: Phase 1 Habitat Survey Map



Legend

Survey boundary	A Arable	Scattered trees
Stream	I Improved grassland margins	Tall ruderal vegetation
Not to scale	Dense scrub	Target Note

Appendix 2: Target Notes

Target Number	Notes
1	Pedunculate Oak with bat roost potential
2	Pedunculate Oak with bat roost potential
3	Water Vole holes in bank of stream
4	Water Vole holes and tunnelling in bank of stream
5	Water Vole latrine in 2021
6	Fox footprints
7	Water Vole holes and latrine on bank of stream 2016
8	Water Vole hole on bank of stream
9	Water Vole holes and latrine on/in banks of stream 2021
10	Water Vole holes and latrine on bank of stream 2021
11	Water Vole holes and tunnelling in bank of stream

Appendix 3: Plant species list

Latin name	Common name
Bryophyta sp.	Mosses
Spirogyra sp.	Blanketweed
Pteridium aquilinum	Bracken
Quercus robur	Pedunculate Oak
Crataegus monogyna	Hawthorn
Aesculus hippocastanum	Horse Chestnut
Sambucus nigra	Elder
Ranunculus repens	Creeping Buttercup
Ranunculus ficaria	Lesser Celandine
Viola odorata	Sweet Violet
Stellaria holostea	Greater Stitchwort
Malva sylvestris	Common Mallow
Geranium molle	Dove's-foot Cranesbill
Rubus fruticosus	Bramble
Rosa canina	Dog Rose
Epilobium hirsutum	Great Willowherb
Heracleum sphondylium	Hogweed
Anthriscus sylvestris	Cow Parsley
Apium nodiflorum	Fool's Watercress
Aegopodium podagraria	Ground Elder
Rumex obtusifolius	Broad-leaved Dock
Urtica dioica	Common Nettle

Hedera helix	Ivy
Euphorbia amygdaloides	Wood Spurge
Arum maculatum	Lords-and-Ladies
Symphytum officinale	Comfrey
Veronica hederifolia	Ivy-leaved Speedwell
Lamium purpureum	Purple Deadnettle
Lamium album	White Deadnettle
Plantago lanceolata	Ribwort Plantain
Galium aparine	Cleavers
Taraxacum officinale	Dandelion
Senacio vulgaris	Common Groundsel
Bellis perennis	Daisy
Achillea millefolium	Yarrow
Cirsium sp.	Thistle
Carex sp.	Sedges
Festicula pratensis	Meadow Fescue
Dactylis glomerata	Cocksfoot

Appendix 4: Bird species list

Common name	Latin name
Red-legged Partridge	*Alectoris rufa*
Stock Dove	*Columba oenas*
Woodpigeon	*Columba palumbus*
Collared Dove	*Streptopelia decaocto*
Lesser Black-backed Gull	*Larus fuscus graellsii*
Little Egret	*Egretta garzetta*
Buzzard	*Buteo buteo*
Kestrel	*Falco tinnunculus*
Magpie	*Pica pica*
Jackdaw	*Corvus monedula*
Rook	*Corvus frugilegus*
Carrion Crow	*Corvus corone corone*
Raven	*Corvus corax*
Blue Tit	*Cyanistes caeruleus*
Great Tit	*Parus major*
Skylark	*Alauda arvensis*
Long-tailed Tit	*Aegithalos caudatus*
Wren	*Troglodytes troglodytes*
Starling	*Sturnus vulgaris*
Blackbird	*Turdus merula*
Robin	*Erithacus rubecula*
Dunnock	*Prunella modularis*
Grey Wagtail	*Motacilla cinerea*
Pied Wagtail	*Motacilla alba yarrellii*
Chaffinch	*Fringilla coelebs*
Greenfinch	*Chloris chloris*
Linnet	*Linaria cannabina*
Goldfinch	*Carduelis carduelis*
Siskin	*Spinus spinus*
Yellowhammer	*Emberiza citrinella*
Reed Bunting	*Emberiza schoeniclus*

Appendix 5: Relevant legislation

5.1 – Bats

In England, Scotland and Wales, all bat species are fully protected under the Wildlife and Countryside Act 1981 (WCA) (as amended), through inclusion in Schedule 5. In England and Wales this Act has been amended by the Countryside and Rights of Way Act 2000 (CRoW) and the Natural Environment and Rural Communities Act 2006 (NERC), which add an extra offence, makes species offences arrestable, increases the time limits for some prosecutions, and increases penalties.

All bats are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations (the Habitats Regulations), which defines 'European protected species of animals'. In England this is the Conservation of Habitats and Species Regulations 2010, in Scotland the Habitat Regulations 1994 (as amended), and in Northern Ireland the Conservation Regulations 1995.

All bats are also protected under the Bern Convention Appendix II, the Bonn Convention Appendix II, and the Wild Mammals (Protection) Act 1996.

The above legislation can be summarised thus (Mitchell-Jones and McLeish, 2004):

- *Intentionally or deliberately kill, injure or capture (or take) bats;*
- *Deliberately disturb bats (whether in a roost or not;*
- *Recklessly disturb roosting bats or obstruct access to their roosts;*
- *Damage or destroy roosts;*
- *Possess or transport a bat or any part of a part of a bat, unless acquired legally;*
- *Sell (or offer for sale) or exchange bats, or parts of bats.*

The word 'roost' is not used in the legislation, but is used here for simplicity. The actual wording is 'any structure or place which any wild animal…uses for shelter or protection' (WCA), or 'breeding site or resting place' (Habitats Regulations).

As bats generally have both a winter and a summer roost, the legislation is clear that all roosts are protected whether bats are in residence at the time or not.

5.2 – Birds

In Britain, all wild birds, their nests and eggs are protected under the Wildlife & Countryside Act 1981. There are penalties for:

- *Killing, injuring or capturing them, or attempting any of these;*

- *Taking or damaging the nest whilst in use;*
- *Taking or destroying the eggs.*

5.3 – Water Vole

As of 12 August 2008, Water Voles have been given full protection under Section 9 of the Wildlife and Countryside Act 1981.

Offences under Section 9 carry a maximum penalty of a fine up to £5000, imprisonment for up to six months, or both, for each animal in respect of which an offence is committed. It is now an offence to:

- *Intentionally kill, injure or take (capture) a Water Vole;*
- *Possess or control a live or dead Water Vole, or any part of a Water Vole or anything derived from a Water Vole;*
- *Intentionally or recklessly damage, destroy or obstruct access to any structure or place which a Water Vole uses for shelter or protection;*
- *Intentionally or recklessly disturb a Water Vole while it is occupying a structure or place which it uses for shelter or protection.*

Cotswold Wildlife Surveys Limited
Company Reg. No. 6864285 (England & Wales)

Andy Warren BSc (Hons), MA (LM), Tech Cert (Arbor A), MCIEEM, TechArborA
Withy Way, Charingworth, Chipping Campden, Gloucestershire, GL55 6NU

Tel: 01386 593056/07879 848449

andy@cotswoldwildlifesurveys.co.uk

Land off School Road, Elmswell, Suffolk – 2023 Updated Preliminary Ecological Appraisal

To: Christchurch Land and Estates (Elmswell South) Limited

Report Number: 2295-CWS-04

Version: 03

Date: 29th November 2023