



Preliminary Ecological Assessment

Cropredy, Banbury

ISSUE RECORD

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Written by	Sally Clague BSc (Hons) Ecologist
Checked by	Cass Stuttard BSc (Hons) Ecologist
Approved by	Jessica Eades BSc (Hons), MCIEEM Technical Director

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Peak Ecology Limited
Arden House
Deepdale Business Park
Bakewell
Derbyshire
DE45 1GT
01629 812511



www.peakecology.co.uk

EXECUTIVE SUMMARY

Overview

This report has been prepared by Peak Ecology Ltd on behalf of Obsidian Strategic. It provides the results of an Ecological Impact Assessment associated with the proposed development to be undertaken on land in Cropredy, Banbury.

The survey included an assessment of the broad habitat types and their ecological importance. The site and immediately adjacent land were also assessed for its potential to support protected species.

Implications and Recommendations

Feature	Recommendations	Further survey
Designated Sites and Habitats		
	<p>Due to the location of the site, in relation to the designated sites the designated sites, they are not anticipated to be affected by the proposals.</p> <p>The habitats on site were of low botanical value and common within the wider area, however they do provide some suitable habitat for a number of protected species. Efforts should be made within the design stage to ensure ecological value is retained on site post development.</p>	None required.
Protected and Notable species		
Badgers	<p>No setts were currently noted on site; however, badger are transient species and may move into the area prior to works starting.</p> <p>Deep, steep sided excavations should not be left overnight without an escape route: either a ramp or sloping bank. Similarly, it is advised that any pipes stored on site are capped.</p>	Pre-commencement check of site to establish if badgers are present.
Bats	<p>Three trees were identified as having low bat roosting potential and two as having moderate bat roosting potential.</p> <p>The boundary features on the site were considered to offer moderate suitability with the canal offering high suitability for foraging and commuting.</p>	<p>If trees identified as having bat roosting potential are to be impacted by the proposed works, further surveys of trees with moderate potential should be undertaken via bat activity surveys. Sectional soft felling of trees with low potential can be undertaken under a precautionary method statement.</p> <p>Transect surveys may be required should the boundary features be impacted.</p>

Feature	Recommendations	Further survey
Herptiles	<p>The site was not suitable for GCN in their aquatic phase but was suitable for GCN and common reptiles and amphibians in their terrestrial phase.</p> <p>Currently a precautionary approach to vegetation removal including, in a staged approach and in a singular direction is considered appropriate. However, this should be reviewed once development plans are known.</p>	To be reviewed once plans are known.
Nesting Birds	<p>Vegetation removal (trees, hedgerow and scrub) should be undertaken outside of the main breeding bird season (March to September inclusive) in order to minimise the risk to damaging active nests.</p> <p>Nesting habitats should be reinstated into the site post development in the form of scrub planting and management. Bird boxes should be included to provide habitat while the scrub establishes.</p>	If works are not undertaken outside of the bird nesting season (March - September) a bird nesting check will be required no more than 48hours prior to vegetation removal.
Riparian mammals	<p>Immediately adjacent habitat is considered suitable for water vole and otter. A buffer of 10m from the canal should be instated to protect this habitat. Precautionary methodology, as used for badgers, regarding deep excavations should be adhered to.</p>	Survey only required if 10m buffer from canal cannot be enforced.

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1 INTRODUCTION

1.1 Scope of Report

This report has been prepared by Peak Ecology Ltd on behalf of Obsidian Strategic. It provides the results of an Preliminary Ecological Assessment associated with proposals for development on land in Cropredy, Banbury. The purpose of this report is to:

- Describe the ecological baseline of the Site, including existing habitats, presence of protected and priority species (see Appendix A for details) and nearby designated Sites;
- Highlight potential significant ecological impacts associated with the proposals;
- Identify suitable mitigation measures and state how they will be secured;
- Assess the significance of any residual impacts;
- Highlight opportunities for ecological enhancement where appropriate; and
- Set out requirements for post-construction monitoring.

In relation to planning and development, this report provides all relevant details to support a planning application, however, it should be read in conjunction with any other ecological surveys that have been undertaken for the Site.

The final development proposal is not known at this time, therefore once the final proposal is known any impact assessments and evaluation may require updating.

The approach to this assessment follows best practice published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2013 & 2015) and the British Standards Institution (BSI, 2013). Details of individual survey methods and associated supporting information are provided in Section 2.

1.2 Site Description

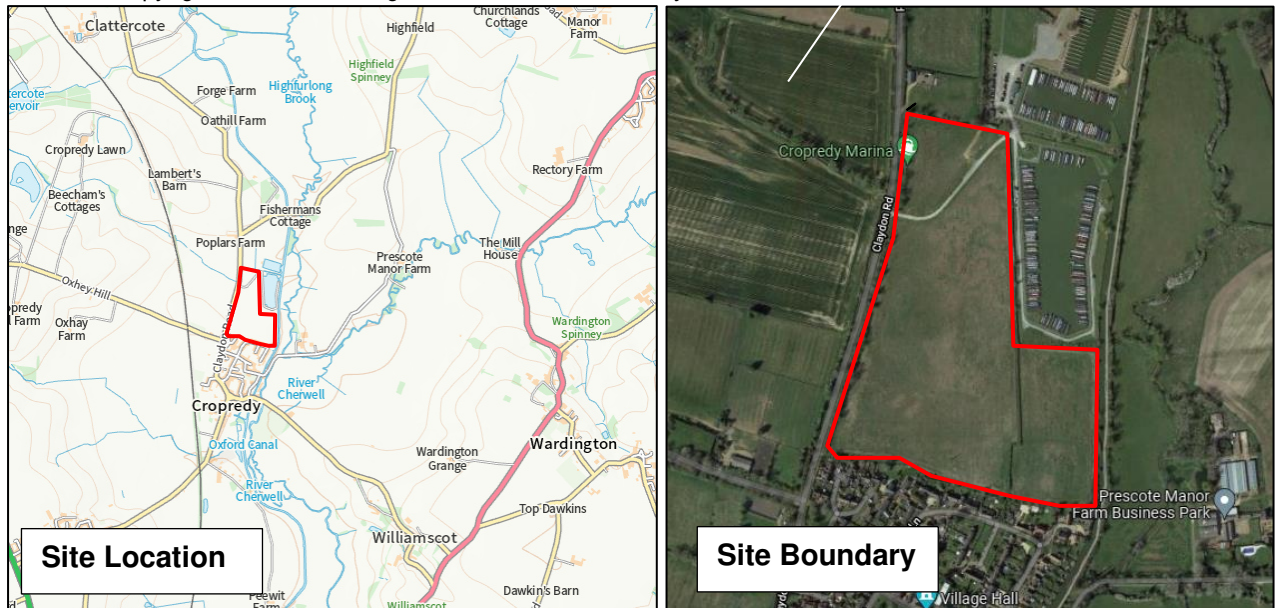
The site comprised an area of land approximately 10.5ha in size, to the north of Cropredy, Banbury (central grid reference: SP 4691 4715). The site comprised two improved grassland fields, bordered by scrub, hedgerows and woodland. The fields were divided by a single mature hedgerow.

The surrounding land use was a mosaic of arable fields, hedgerows and small scattered woodland areas. Cropredy Marina is located adjacent to the site to the north-east, while Oxford Canal lies along the eastern border of the site. The village of Cropredy borders the site to the south, with other settlements including Great Bourton and Williamscoth lying 1.9km south-west and 1.7km south-east of the site respectively. A trainline is located approximately 350m west of site.

The survey boundary was as per the red line on drawing Figure 1, and will be referred to as the site within this report. The site location is also illustrated below.

Figure 1: Location Map*

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1.3 Zone of Influence

The geographical extent of the potential impact of a proposed development is known as the Zone of Influence. The Zone is determined by the nature of the development and also in relation to individual species, depending on their habitat requirements, mobility and distances indicated in any best practice guideline.

In relation to great crested newt *Triturus cristatus* (GCN) the Zone of Influence is considered to be up to 500m from the Site. In regards to bats, the Zone of Influence is considered to be the Site itself and any connecting habitat links suitable for use as commuting and foraging corridors. The Zone of Influence regarding badgers *Meles meles* is considered to be up to 30m from the Site boundary.

1.4 Planning Context and Legislation

The National Planning Policy Framework 2021 requires that when assessing a planning application all Local Planning Authorities (LPAs) must consider potential impacts on biodiversity that may result from the proposals. In addition to this, county and borough councils typically have biodiversity policies within their Local Development Frameworks that they must also comply with.

In practice, this means that potential impacts on designated sites, priority species and habitats such as those listed on the UK Post-2010 Biodiversity Framework (formerly the UK Biodiversity Action Plan) and species that receive legal direct protection (typically via the Conservation of Habitats and Species Regulations 2017 (as amended) and/or the Wildlife and Countryside Act 1981 (as amended)) are all material planning considerations.

In relation to European Protected Species, the LPA requires sufficient information about likely impacts and mitigation or compensatory measures to satisfy the three Habitats Directive tests, the most relevant to ecological reports being that which relates to the Favourable Conservation Status of the species in question.

Appendix A provides a definition of “protected or priority species” for the purposes of this report, and Appendix B provides details on the legislation for species relevant to this Site.

2 METHODOLOGY

2.1 Desk Study

The desk study comprised a review of existing information held by the local biological records centre and other specialist groups, as appropriate. Thames Valley Environmental Records Centre (TVERC) were contacted in September 2021 to obtain locations of designated Sites and any existing records of protected or priority species within 2km of the site.

In addition, a Site-specific check has been carried out using the online interactive mapping tool MAGIC (Multi-Agency Geographic Information for the Countryside) to identify any statutory designated Sites within the search radius and any previously granted European Protected Species Applications.

2.2 Survey Team

The survey was undertaken on the 29th September 2021 by ecologist Sally Clague BSc (Hons), assisted by graduate ecologist Niamh Gibson BSc (Hons). Sally has been a professional ecologist for 6 years and is experienced in the use of the Phase 1 Habitat Survey methodology, identification of vascular plants and scoping assessments for protected species. Sally is appropriately qualified for this type of survey based on the CIEEM competency framework (CIEEM, 2012).

2.3 Phase 1 Habitat Survey

Following standard methodology (JNCC, 2010) the survey comprised a walkover of the site to classify and map the extent of individual habitat types, based on the identification of individual plant species. Any evidence of invasive plants such as Himalayan Balsam *Impatiens glandulifera* was also noted.

Nomenclature for vascular plant species follows Stace (2010).

2.4 Protected and Priority Species

The habitats present were assessed for their potential to support any legally protected or otherwise notable species and any incidental sightings or field signs discovered during the surveys were recorded.

All British wildlife and countryside legislation, policy and guidance were taken into consideration including;

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC;
- The Protection of Badgers Act 1992;
- The Countryside and Rights of Way Act 2000;

- The Hedgerow Regulations 1997;
- The Natural Environment and Rural Communities Act (NERC) 2006; and
- The UK Post-2010 Biodiversity Framework (formerly known as UK BAP).

2.5 Limitations

3rd Party Data

The desk study data obtained for this assessment was provided and validated by third parties therefore Peak Ecology have no control over any errors within that dataset. The data represents the information available at the date of request and a lack of records for any particular species does not necessarily indicate absence from the local area as many species are under-recorded.

Survey Methods

Based on the identification of individual plant species, the Phase 1 Habitat Survey provides sufficient information to enable classification of broad habitat types; however, it does not constitute a detailed botanical survey. Plant species lists compiled by this type of survey should not be considered definitive as not all species will be apparent at all times of year.

All species-specific surveys are undertaken following recognised guidance within suitable seasons and weather parameters. However, it should be noted that survey visits are snapshots of the site conditions, therefore particular conditions of each season, or year, may impact upon the survey results.

Access

The entirety of the site was fully accessible during the survey.

Survey Timing and Conditions

The survey was carried out within the optimal season for botanical surveys (April-September, inclusive). However, the grassland had recently been cut making it easy to miss species that may have been present in the sward. However, this was not considered a constraint on being able to classify habitat type and therefore was not a constraint to the survey.

Lifespan of Data

The results and recommendations contained within this report are considered to be valid for up to two years from the date of survey, assuming that there are no significant changes to the site condition or management within this period. After this period, or should the site conditions change, an update may be required in order to inform ecological constraints to development proposals and/or accompany a planning submission.

3 **RESULTS**

3.1 **Desk Study**

Designated Sites

Thames Valley Environmental Records Centre provided details of one non-statutory designated site within the 2km search area; Williamscot Community Garden Potential Local Wildlife Site (pLWS) which is located 1.8km to the south-east of the site. Further details of designated sites are provided in the table below. No statutory designated sites were identified within 2km of the site.

The site lies within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for the River Itchen SSSI (10km to NW). The Impact Risk Zone is an area defined by Natural England which reflects the particular sensitivities of the features for which the SSSI is designated and indicates the types of development proposal which could potentially have adverse impacts. For this site, only development proposals related to aviation are not permitted under the impact risk zone categories.

Table 1: Designated Sites

Name	Status	Reason for Designation	Approximate Distance & Direction from Site
Non-Statutory Designated Sites			
Williamscot Community Woodland	pLWS	This site is a small community woodland in Williamscot. It is a small spinney to east of Cropredy Road, in which there are the remains of a historic settlement. It contains some mature trees.	1.80km to SE

Protected / Notable Species

The table below provides a summary of the species records received from Thames Valley Environmental Record Centre that are considered most relevant to the site and/or proposals. Records over 10 years old have been omitted from this report, however, the full dataset is available on request.

In addition to the records below, one European Protected Species license (EPS) for common pipistrelle *Pipistrellus pipistrellus* and brown long-eared bat *Plecotus auritus* allowing the destruction of a resting place was identified 0.46km south of the site which expired in 2021. The site also falls within the Countryside Stewarding Targeting area for lapwing *Vanellus vanellus* and corn bunting *Emberiza calandra*.

Table 2: Summary of protected and /or notable species relevant to the Site and/or proposals

Scientific Name	Common Name	Closest record (approximate location and date)	Most recent record (approximate location and date)	Total Number of Records	Status / Relevant Legislation
Birds					
<i>Motacilla flava</i>	Yellow Wagtail	0.14km to SE (2015)		1	BoCC Red
<i>Muscicapa striata</i>	Spotted Flycatcher	0.14km to SE (2015)		1	BoCC Red
<i>Falco tinnunculus</i>	Kestrel	0.14km to SE (2014)	(2015) 1.27km to NW	33	BoCC Amber
<i>Cygnus olor</i>	Mute Swan	0.14km to SE (2015)		13	BoCC Amber
<i>Alcedo atthis</i>	Kingfisher	0.14km to SE (2015)	2016 (0.80km to S)	5	WCA Sched 1, BoCC Amber
<i>Milvus milvus</i>	Red Kite	0.14km to SE (2014)	2015 (1.42km to SW)	6	WCA Sched 1
<i>Apus apus</i>	Swift	0.24km to S (2019)		28	BoCC Amber
<i>Chroicocephalus ridibundus</i>	Black-headed Gull	0.90km to W (2011)		1	BoCC Amber
<i>Pyrrhula pyrrhula</i>	Bullfinch	0.90km to W (2011)	1.42km to SW (2012)	2	BoCC Amber
<i>Turdus pilaris</i>	Fieldfare	0.90km to W (2011)	2015 (1.10km to S)	18	WCA Sched 1, BoCC Red
<i>Vanellus vanellus</i>	Lapwing	0.90km to W (2014)		5	BoCC Red
<i>Passer domesticus</i>	House Sparrow	0.90km to W (2011)		1	BoCC Red
<i>Alauda arvensis</i>	Skylark	0.90km to W (2011)		2	BoCC Red
<i>Perdix perdix</i>	Grey Partridge	0.91km to N (2014)		1	BoCC Red
<i>Tyto alba</i>	Barn Owl	0.91km to N (2014)	2015 (2.10km to S)	12	WCA Sched 1
<i>Phoenicurus phoenicurus</i>	Redstart	0.91km to N (2014)		1	BoCC Amber
<i>Turdus iliacus</i>	Redwing	0.91km to N (2012)		1	BoCC Red
<i>Poecile palustris</i>	Marsh Tit	0.91km to N (2015)		3	BoCC Red
<i>Emberiza schoeniclus</i>	Reed Bunting	1.10km to S (2014)		8	BoCC Amber
<i>Larus canus</i>	Common Gull	1.10km to S (2015)		2	BoCC Amber
<i>Motacilla cinerea</i>	Grey Wagtail	1.10km to S (2014)		12	BoCC Red
<i>Columba oenas</i>	Stock Dove	1.27km to NW (2014)		1	BoCC Amber

Scientific Name	Common Name	Closest record (approximate location and date)	Most recent record (approximate location and date)	Total Number of Records	Status / Relevant Legislation
<i>Falco peregrinus</i>	Peregrine	1.42km to SW (2014)		1	WCA Sched 1
<i>Acanthis cabaret</i>	Lesser Redpoll	1.42km to SW (2014)		1	BoCC Red
<i>Linaria cannabina</i>	Linnet	1.42km to SW (2014)		1	BoCC Red
<i>Emberiza citrinella</i>	Yellowhammer	1.42km to SW (2014)		1	BoCC Red
<i>Delichon urbicum</i>	House Martin	1.55km to SE (2011)		1	BoCC Amber
<i>Anthus pratensis</i>	Meadow Pipit	2.10km to S (2011)		1	BoCC Amber
<i>Numenius arquata</i>	Curlew	2.10km to S (2015)		5	BoCC Red
Bats					
<i>Pipistrellus</i>	Pipistrelle Bat species	1.39km to SE (2018)		1	HabDir-A4, HabReg-Sch2, WCA-Sch5
<i>Plecotus auritus</i>	Brown Long-eared Bat	1.99km to SW (2016)		1	HabDir-A4, HabReg-Sch2, WCA-Sch5
Mammals					
<i>Erinaceus europaeus</i>	West European Hedgehog	0.25km to SSW (2018)		4	UKBF
<i>Lutra lutra</i>	European Otter	0.76km to S (2016)		3	WCA Sched 5
<i>Meles meles</i>	Badger	Within search area*		4	
Invasive non-native					
<i>Impatiens capensis</i>	Orange Balsam	0.68km to NNE (2014)		4	-
<i>Pacifastacus leniusculus</i>	Signal Crayfish	0.80km to S (2016)		2	WCA Sched 9
<i>Dikerogammarus haemobaphes</i>	Demon Shrimp	1.30km to S (2015)	2016 (1.33km to SSE)	5	-
<i>Buddleja davidii</i>	Butterfly-bush	1.42km to SW (2016)		1	-

* Due to risk of persecution of this species, exact location of record remains confidential.

Key:

BoCC – Birds of Conservation Concern	WCA Sched. 1 – Wildlife and Countryside Act 1981 (as amended): Schedule 1 (Specially protected birds)
CoHS – Conservation of Habitats and Species Regulations 2017 (as amended)	WCA Sched 5 - Wildlife and Countryside Act 1981 (as amended): Schedule 5 Animals Species that are protected under Section 9
UKBF – UK Post-2010 Biodiversity Framework	WCA Sched. 9 - Wildlife and Countryside Act 1981 (as amended): Schedule 9 (Animals and Plants to which Section 14 Applies)
WCA – Wildlife and Countryside Act 1981 (as amended)	

3.2 Phase 1 Habitat Survey

The individual habitat types recorded at the site are described under the sub-headings below, with the location and extent of each illustrated on the Phase 1 Habitat Map in Figure 2. Details of target notes can be found on the Figure. Representative photographs of the site can be found in Appendix D.

No invasive species such as Japanese knotweed *Fallopia japonica* were noted on site.

3.2.1 Improved Grassland

The majority of the site comprised of two fields of improved grassland which appeared to have been recently mown, with the arising being removed from site. The sward was approximately 5cm in height.

The sward showed indication of being previously improved as a high frequency of perennial rye grass *Lolium perenne* was present and forb diversity was low. Aerial imagery shows the site as being previously used as arable cropland in 2011.

Both fields were grass dominated with perennial rye grass, and Yorkshire fog *Holcus lanatus* abundant with frequently occurring sterile brome *Bromus sterilis*, cock's foot *Dactylis glomerata* and meadow grass species *Poa sp.* Soft brome *Bromus hordeaceus* and crested dogs' tail *Cynosurus cristatus* was occasionally present. Forbs were occasional throughout the sward and included species such as common nettle *Urtica dioica*, broad-leaved dock *Rumex obtusifolius*, dandelion *Taraxacum sp.*, common hogweed *Heracleum sphondylium*, red clover *Trifolium pratense*, white clover *Trifolium repens*, creeping thistle *Cirsium arvense*, greater bird's-foot trefoil *Lotus pedunculatus*, oxeye daisy *Leucanthemum vulgare*, common knapweed *Centaurea nigra*, and speedwell *Veronica sp.* Creeping buttercup *Ranunculus repens* was also local abundant at the edge of the field. An unknown dead woody species was frequently present across the site, it was not identifiable during the survey.

The second field, (located to the east) had a similar species composition with the forbs occurring less frequently in the sward. Additional species including white dead nettle *Lamium album*, yarrow *Achillea millefolium*, horsetail *Equisetum sp.* and sainfoin *Onobrychis viciifolia* which were rarely present.

3.2.3 Poor Semi-improved Grassland

A short grassland verge ran adjacent to the gravel road bisecting the site which was closely mown to a sward height of approximately 2cm. The area was grass dominated and included perennial rye grass, cocks' foot and meadow grass species. An increased forb diversity was noted here and included species such as dandelion, creeping buttercup, spear thistle *Cirsium vulgare*, common knapweed, oxeye daisy, broadleaved plantain *Plantago major*, yarrow *Achillea millefolium* and selfheal *Prunella vulgaris*.

An area of unmown grass approximately 3m wide (TN1) was identified in the north-west of the site, north of the access road adjacent to an electrical hub. The grass in this area was unmown and approximately 40cm in height. Species present included brome *Bromus sp.* Yorkshire fog, perennial rye grass with broad-leaved dock, field pansy *Viola arvensis*, red clover, greater bird's-foot trefoil, Yorkshire fog, perennial rye grass, dove's-foot cranesbill *Geranium mole*, selfheal, oxeye daisy, spear thistle, knapweed and carrot *Daucus sp.* present throughout.

3.2.2 Hedgerows

The site was bounded on all sides (except the eastern boundary) by hedgerows.

H1 – Located along the northern boundary of site, approximately 4m tall and up to 2m wide at its widest point. The hedgerow comprised an unmanaged defunct hedgerow, consisting mainly of hawthorn *Crataegus monogyna*, hazel *Corylus avellana* and blackthorn *Prunus spinosa*. Elder *Sambucus nigra* was rarely present in the hedge alongside elm *Ulmus sp.* (which was dead whenever present). Hedge bindweed *Calystegia sepium* was interwoven in the hedge. Parts of the hedgerow were dense and scrub-like, species present in the understory of the hedgerow included couch grass *Elymus repens* and common knapweed, common hogweed, willowherb *Epilobium sp.* species, nettle, bramble and rarely occurring nightshade *Solanum sp.* The ditch ran immediately adjacent to the hedge.

H2 – Located along the western side of site up to the entrance way. The hedgerow was largely defunct and unmanaged and consisted mainly of young dead English elm trees *Ulmus procera*, and blackthorn. Tall ruderal and scrub were beginning to dominate the area. Species present through included cocks' foot grass, meadowsweet, common nettle, bramble *Rubus fruticosus*, hogweed, Guelder-rose *Viburnum opulus*, Herb Robert *Geranium robertianum*, hedge woundwort *Stachys sylvatica* and white dead nettle.

H3 – Along the western boundary of site, beyond the entrance way. Initially dominated by hawthorn becoming blackthorn dominated as you progress south, occasional ash *Fraxinus excelsior* saplings were present. Being 2.5m tall and 2-3m wide the hedge showed more recent signs of management via cutting and shaping but didn't appear to have been cut at least for one year. Limited ground flora was present, with species included dog rose, ivy *Hedera helix* and nettle. Mature sycamore *Acer pseudoplatanus* and ash trees were present within the hedgerow. The hedgerow stops short of the end of site and an area of tall ruderal and scrub dominate the boundary line. The ditch ran immediately adjacent to the ditch.

H4 – A small section of unmanaged hedgerow that starts as a narrow-wooded strip (approximately 5m in width). Species present included cherry, hawthorn, holly and blackthorn. Ground flora was minimal with ivy dominant.

H5 – A small section of hedgerow adjacent to the garden fences along the southern boundary of site. It was well maintained approximately 1.5m high and 1.5m wide, dominated by hawthorn with occasional dogwood *Cornus sanguinea*.

H6 – Located in the centre of site between the two fields. A blackthorn and hawthorn dominated hedge approximately 2m thick and 4m high. Recently infilled with additional woody species planting as evident by the sapling protectors still in place at the base of the hedgerow. Further management such as cutting looks to have lapsed in the past year or two. Additional woody species occasionally present included dogwood, elder and field maple *Acer campestre*. Willow *Salix sp.* was rarely present. Bramble climbed the woody species. Ground flora was minimal and was dominated by false oat grass and cock's foot.

H6a – A continuation of H6 creating the eastern border of the site. This section of hedgerow was more neatly managed and was approximately 2-3m high and 1-2m wide, dominated by blackthorn, with occasional willows. Several mature ash and oak *Quercus sp.* standards were located within the hedgerow as well as a single mature standing dead wood tree.

3.2.3 Tall Ruderal

Several areas of tall ruderal species were present on site. Species present were similar across site and included false oat-grass, creeping thistle, spear thistle, willowherb, cock's foot. Within a corner of tall ruderal adjacent to H6 (TN2) blackthorn had begun suckering out from the hedgerow. Along the southern boundary was the , the largest continuous area of tall ruderal on site (TN3) (approximately 4m wide) teasels were frequently present.

3.2.4 Scrub

On the eastern boundary of the site an area of tall ruderal and scrub species between 9m and 6m wide were present. Species were dominated by bramble with sow thistle *Sonchus sp.*, nettle, willowherb, ash saplings and dock species *Rumex sp.* Mature willows were present along the canal side.

3.2.5 New Planted Woodland

South of the marina was an area of new planted woodland, approximately 3 years in age. Numerous wood species were present including hawthorn, hazel, willow, oak, field maple, silver birch *Betula pendula* and cherry *Prunus sp.* all between 1.5 – 4m in height. As the trees are not old enough to create a closed canopy significant amount of tall grass (over 40cm) surrounds the trees and is dominated by false oat grass, occasional reed grasses and knapweed.

The area is currently fenced off from site by stock fencing therefore not allowing a full ground flora species list to be created.

A second small area of planted trees were located in the north of site. These trees were densely planted and consisted of species such as beech *Fagus sp.*, rowan *Sorbus aucuparia*, oak, hazel, hawthorn, field maple, and dogwood. The trees were between 2 and 4m tall. Grassland was growing between the trees, species present included Yorkshire fog, false oat grass, spear thistle, oxeye daisy, common knapweed, selfheal and a carrot family species.

3.2.6 Ditches

Ditches ran along the majority of hedgerows on site.

D1 – located behind H1 to the northern site boundary. It comprised a 1m wide ditch with short, shallow banks and running water of approximately 5cm in depth. Minimal aquatic vegetation was present on the banks with the last 10cm vegetated, with some nettle, meadowsweet *Filipendula ulmaria* and common figwort *Scrophularia nodosa* and grasses.

D2 – Lay to the east of H2 and H3 and was culverted under the marina access track. The bank sides were densely overgrown with tall grasses, nettle and willowherb. Willow trees and the hedgerow overhung the ditch putting it in full shade. The ditch was only partially accessible due to the vegetation, where it was accessible it was dry at the time of survey. Ditch base appeared to have no vegetation growth indicating it may hold waters during periods of heavy rainfall.

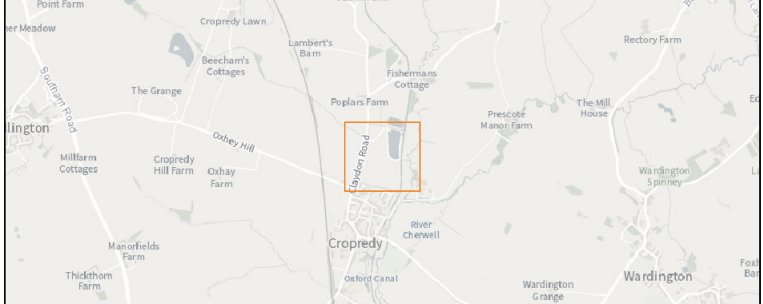
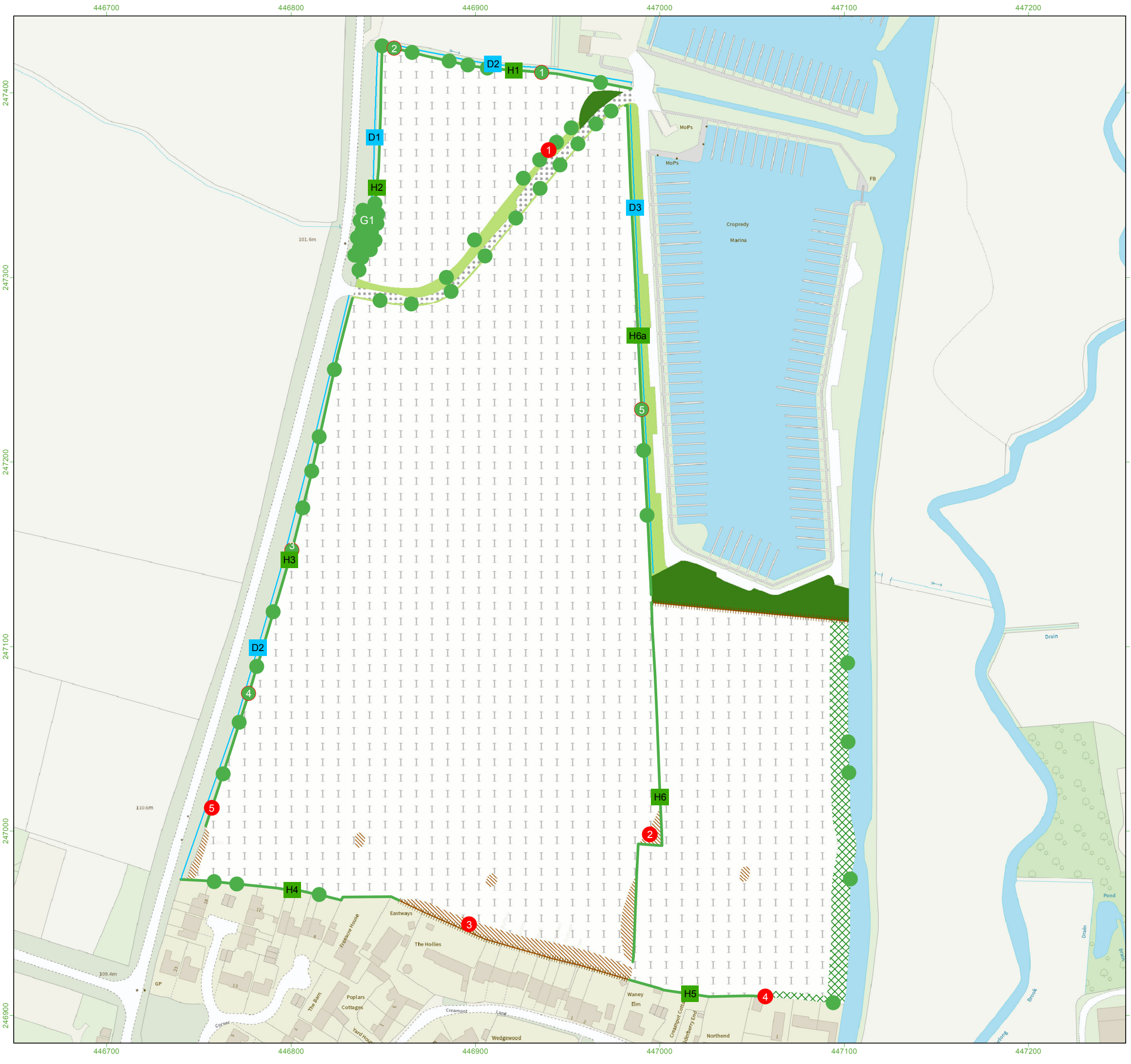
D3 – located along the length of H6a, 1m wide at the bank tops and approximately 1m deep. Shaded and overgrown by the adjacent hedgerow, the ditch was dry in places but holding shallow water in others. Aquatic vegetation including bullrush *Typha sp.* and bur-reed *Sparganium sp.* indicate it is wet for prolonged periods of the year. Willowherb and grasses such as false oat grass dominated the bankside.

3.2.6 Trees

Mature trees were sporadically present within the hedgerows on site as well as within the scrub on the eastern boundary. The tree species were predominantly ash, with occasional oak, sycamore and willow.

At the south end of H2 a group of crack willow *Salix fragilis*, including two dead individuals that had had the crown removed were present. The willows were accompanied by sycamore, hazel *Corylus avellana* and field maple trees.

Figure 2: Phase 1 Habitat Plan –



Survey Information

	Site boundary (112,543.8m ²)
Phase 1 Habitat Survey	
	Newly planted woodland (2,069.5m ²)
	Scrub (2,195.7m ²)
	Improved grassland (103,257.9m ²)
	Poor semi-improved grassland (2,543.9m ²)
	Tall ruderal (1,508.9m ²)
	Bare ground (967.9m ²)
	Hedgerow
	Ditch
	Fence
	Tree with bat roosting potential
	Tree
	Target note

Target Notes:

- [1] Increased diversity and uncut grass
- [2] Suckering blackthorn
- [3] Teasel
- [4] Nettle patch
- [5] Dominant buttercup

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PROJECT TITLE
CLAYTON ROAD, CROPREDY

DRAWING TITLE
Figure 1. Preliminary Ecological Appraisal

VER	DATE	REMARKS	Drawn	Checked
1.2	27/10/21	PEA	MP	SC

DRAWING NUMBER: **PeakEcology/ClaytonRoad/Phase1**

 ECOLOGICAL CONSULTANTS	Arden House, Deepdale Business Park, Bakewell, Derbyshire, DE45 1GT. www.peakecology.co.uk	DATUM	OSGB
		PROJECTION	BNG
		PLOT SIZE	A3
		SCALE	1:2,000

3.3 Protected and Priority Species

3.3.1 Herptiles (Reptiles and Amphibians)

No records of any amphibian or reptile species were returned during the desk study within the 2km search area, neither were there any great crested newt (GCN) *Triturus cristatus* class license survey returns within the search area.

Aquatic habitats present on site included a shallow drainage ditch below the dividing H6a and two drainage ditches and canal immediately adjacent to the north, west and east boundaries respectively. D1 was not considered suitable for GCN in their aquatic phase due to the low levels of vegetation and the flow of the water. D2 was not considered suitable for GCN in the aquatic phase as it was considered to be largely dry throughout the year. The canal was a navigable canal, this combined with the additional the increased disturbance from boat activity linked to the marina makes the canal and the marina unsuitable for GCN. Whilst containing shallow, poor-quality water at the time of survey D3 was considered largely unsuitable for breeding newts due to the likely hood of the ditch drying annually and the lack suitable egg wrapping vegetation.

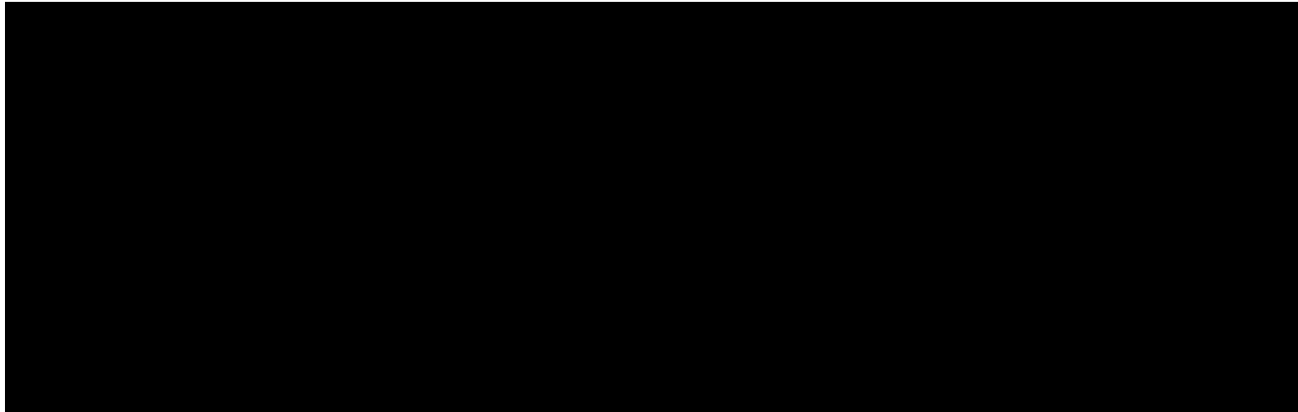
The majority of the site was considered suitable for amphibians and reptiles, in their terrestrial phase specifically the areas of tall ruderal habitat and the base of the hedgerows. The site offers limited basking potential with the only suitably habitat considered to be the entrance road and the adjacent close mown semi-improved grassland habitat. The hedgerows and tall ruderal areas, provided suitable cover for commuting and foraging amphibians.

Following a search of aerial photography and OS maps of the site, three off-site standing waterbodies were identified within the 500m search area. One pond was located 420m to the north west, and the remaining two ponds were located 140m east and 160m south east respectively. The two waterbodies to the east are separated from site by the High Furlong Brook and Oxford Canal, both of which are considered barriers to dispersal and therefore are not considered further in this report. Due to access restrictions, the pond to the north west was not assessed during the survey.

3.3.2 Breeding Birds

The hedgerows, trees and tall ruderal and new woodland areas provided suitable nesting, roosting and foraging habitat for a range of common bird species. Bird species recorded on site during the survey included common wood pigeon *Columba palumbus*, European robin *Erithacus rubecula*, pheasant *Phasianus colchicus*, Eurasian blue tit *Cyanistes caeruleus*, Eurasian jackdaw *Corvus monedula*, magpie *Pica pica* and kestrel *Falco tinnunculus*. Kestrel are Amber Listed Birds of Conservation Concern (BoCC) (Eaton *et. al.*, 2015), whilst the other noted species are Green Listed BoCC.


The desk study returned records of twenty-nine species of bird within the 2km search area, fourteen of which are Red Listed BoCC and twelve are Amber Listed BoCC. Five of these birds are protected under the Wildlife and Countryside Act (1981) WCA Schedule 1.


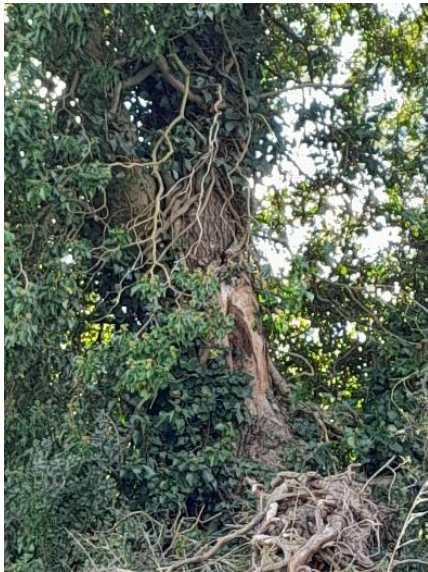



3.3.4 Bats

Records of two bat species, brown long-eared bat *Plecotus auritus* and pipistrelle species *Pipitrellus sp.* were returned in the desk study, with the closest and most recent record 1.39km south east of the site in 2018.

No structures were present on site, however several trees within the boundary had features with potential for roosting bats.

Reference	Description	Photograph	Grid Reference	Assessed Roost Status
T1	Mature ash, partially dead with split within the canopy which was upward facing and open to the elements		SP 46938 47412	Low Potential

Reference	Description	Photograph	Grid Reference	Assessed Roost Status
T2	Dying mature ash, various splits on underside of upper branch		SP 46864 47424	Moderate Potential
T3	Ash with single tear out on central trunk with deadwood still in place		SP 46808 47174	Low Potential
T4	Ash with single woodpecker hole on central trunk	N/A	SP 46761 47026	Low Potential

Reference	Description	Photograph	Grid Reference	Assessed Roost Status
T5	Standing deadwood with two rot holes on pruned branches, woodpecker hole on main stem and split on upper stems.		SP 46991 47232	Moderate Potential

Foraging and Commuting Potential

The boundary hedgerows and adjacent canal were of **high** suitability for foraging and commuting bats.

3.3.5 Otter, Water vole and White Clawed Crayfish

Three records of otter *Lutra lutra* were returned in the desk study 0.7km to the south of the site in 2016. No records of water vole *Arvicola amphibius* or white-clawed crayfish *Austropotamobius pallipes* were returned in the desk study.

The ditches on site were considered to offer sub-optimal habitat for water vole due to their low levels of water and minimal presence of suitable food. However, the offsite ditches, marina and canal may provide suitable habitat for water vole. The habitats on site were not considered suitable for otter holts but could be utilised for commuting purposes. The canal immediately adjacent to the site is considered suitable for otters. No evidence for these species was noted during the survey. The ditches on site were dry or had shallow, still water at the time of survey but may be wet at times during the year.

No habitats on site were considered suitable to support White Clawed Crayfish and have therefore not been considered further in this report.

3.3.6 Other Protected and/or Notable Species

The boundary habitats on site offered some suitability for foraging hedgehog *Erinaceus europaeus* and brown hare *Lepus europaeus*, Priority Species under the UK Post-2010 Biodiversity Framework (formerly UK BAP).

The site is not considered likely to support any other protected or priority species.

4 EVALUATION OF IMPACTS AND MITIGATION MEASURES

The final development proposal is not known at the time of writing, therefore evaluations and assessment of potential impacts discussed below are provisional, where stated. Once the final proposal is known any impact assessments and evaluation may require updating to reflect the full impact assessment.

4.1 Designated Sites

The development site falls within the SSSI Impact Risk Zone for the River Itchen SSSI (10km to NW). Only aviation works are listed under the risk category for this site and therefore, unless the development included aviation, no impacts to the SSSI are considered to occur for the development.

The development of the site is not expected to impact on the non-statutory designated site within the 2km of the site.

4.2 Habitats and Botanical Interest

All hedgerows containing at least 80% native species are listed as Priority Habitats under the UK Post-2010 Biodiversity Framework. All hedgerows on site meet this requirement. The hedgerows bounding the site were assessed under the Hedgerow Evaluation and Grading System (HEGS) (Clements & Tofts, 1992). Hedgerow H3 scored a minus 2 qualifying them as having ecological significance and the potential to be classed as 'important' under the REGS assessment (DEFRA, 2007). However, it is recommended that if any of the above hedgerows are to be impacted by the work a full REGS assessment is undertaken.

Hedgerow habitat should be sought to be retained, in particular H3. If hedgerows are proposed for removal this will require consent from the Local Planning Authority (LPA) or other relevant body. Replacement planting of hedgerow, with a species diversity that at least matches that which has been removed, will be required to mitigate for any hedgerow to be lost.

The habitats across the wider site occur frequently in the wider landscape and contain common and widespread species. These were therefore not considered to be botanically significant. The boundary features were considered to be the most botanically valuable habitats. Although not considered botanically significant they are considered important to support protected faunal species. The design of the proposed development should include creation and re-creation of habitats to ensure no-net loss in biodiversity on incurred from the works.

Trees to be retained throughout works and should be adequately protected during the works in line with BS5837:2012 *Trees in relation to design, demolition and construction - Recommendations*. No materials should be stored under the canopy of the trees during construction works and all Root Protection Areas (RPA) should be marked out prior to commencement of work.

No invasive species were noted on site.

4.3 Protected and Notable Species

4.3.1 Herptiles

Boundary habitats on site provide suitable commuting, sheltering and foraging habitats for reptiles and amphibians, however these are limited and occur frequently in the wider environment. In addition, there was a lack of suitable aquatic habitat to support breeding of amphibians on site.

Whilst no evidence of reptiles or amphibians was observed, it cannot be ruled out that they are present around the site. Any ground level clearance has the potential to disturb these species, should they be present.

The presence of GCN is considered unlikely, however as the development proposal isn't known, the extent of potential impact cannot be fully understood at this time. At this point in time, it is considered that a precautionary non-licensed method statement would be sufficient, however this should be subject to review once the development plans are known.

A precautionary non-licensed method statement approach includes ensuring vegetation is cleared on a warm day, with contractors walking over the area before cutting vegetation. Cutting of the vegetation should be carried out in a single direction away from the area of works and in stages to prevent harm to any fauna that may be sheltering within. The first cut should reduce the sward to a height of 10cm, followed shortly after by a second cut which will reduce the height to 5cm or less, to allow for the natural dispersal of reptiles from the site.

If any common amphibians are found they should be carefully moved to an area of similar habitat, away from the working area. If any reptiles are found they should be left to disperse naturally. In the unlikely event a GCN is found on site all works must stop and an ecologist must be contacted for further advice.

4.3.2 Breeding Birds

The Site falls within a Priority Area for lapwing and corn bunting, under the Countryside Stewardship Scheme. Lapwing like areas of short grassland with bare patches and perhaps pools of water for breeding habitat as they like to have clear vantage points to keep a watch for predators, at the time of survey the site did not provide suitable habitat for these species. Areas of tussocky grassland and tall ruderal, scrub trees and hedgerow may provide suitable foraging and nesting habitats.

It is recommended that vegetation removal is undertaken outside of the main breeding bird season, which is generally considered to be March to September (inclusive), to minimise the risk of damaging active nests. If this is not possible, a suitably experienced ecologist should search all areas for active nests prior to vegetation removal, preferably immediately prior to, and no more than 48 hours before removal. Any identified active nests must be protected from disturbance until all birds have fledged, using suitable barriers where necessary.

Contractors should remain vigilant throughout the year as some species are known to breed year-round.

A kestrel was spotted spending significant amounts of time hunting on site during the survey, therefore in addition to standard bird boxes, kestrel specific bird boxes should be included in post development plans. An example can be found using the following link <https://www.nhbs.com/kestrel-nest-box>



4.3.4 Bats

Five trees on site were considered to have Bat Roosting Potential (BRP); three with low roosting potential and two with moderate roosting potential. It is recommended that these trees be retained and un-impacted by the proposals. Should this not be possible it is recommended that further surveys are undertaken of those trees with moderate potential and a precautionary method statement approach be used for those trees identified as low potential to support roosting bats. This involves the controlled lowering of the section of the tree to the ground where they stay in-situ for a minimum of 24 hours with the suitable feature facing upwards to allow natural dispersal.

A review of the condition of the trees indicates that the moderate potential trees may not be suitable for aerial tree climbing to closer inspect the potential bat roosting features, therefore nocturnal bat activity surveys in the form of dusk emergence and/or dawn re-entry surveys should be undertaken to confirm presence / likely absence of roosting bats to industry accepted levels. This summarised in Table 3 below:

Table 3: Additional survey requirements for trees with bat roosting potential

Assessed Roost Status	Minimum Survey Effort for Trees
Negligible potential	No further survey
Low potential	No further survey Precautionary approach using soft fell
Moderate potential	Two survey visits (One dusk and one dawn survey)
High potential / confirmed roost	Three survey visits (At least one dusk and one dawn)

Should the grassland be removed from site a loss of foraging habitat is anticipated to be lost. However, this loss is not considered to be significant as similar habitats are present in the wider area. Should the hedgerows be removed from site this will result in a loss of commuting and foraging habitat which will have a more significant impact on the local bat population as it may result in fragmenting the wider habitat, and the loss of linear commuting features within the landscape. It is therefore recommended that the hedgerows are not removed as part of the development. Should the hedgerows and linear features be required to be removed from site a bat transect survey will be required to assess the impact and inform mitigation. The Oxford canal, immediately adjacent to the site offer excellent commuting and foraging habitat. This should not be disturbed by the works and dark corridor should be created along this eastern side of side both during construction and post-construction to ensure light spill does not impact upon the canal.

To minimise any negative effects on bat foraging habitat within the works area, it is recommended that bat friendly low-level lighting is used in accordance with guidance set out in Bats and Artificial Lighting in the UK (BCT, 2018), should lighting be needed during (including nights) or after the works. Lighting schemes should take the following into consideration;

- Avoiding direct lighting of sensitive habitats including bat roosts, trees, woodland edges, hedgerows, and grassland;
- Where possible install lamps of the shortest permissible column height and at the lowest permissible density;
- Use of low intensity bulbs (sodium lamps) to minimise light intensity and impacts to bats;
- Lamps should be fitted with spill accessories avoiding upward spill and spill onto site boundaries.

4.3.5 Riparian Mammals

Whilst the site was not considered suitable to support water vole or otter the habitat immediately adjacent to site has the potential to support both of these animals. It is therefore recommended that a 10m buffer strip between the canal and the eastern edge of the proposed development of site is created.

If a buffer cannot be created, including if works include extension to the marina, a riparian mammal survey along the canal will be required and works should be carried in conjunction with any recommendations made. Should the proposed works included extension of the marina there is potential to improve the site suitability for water vole and such consideration should be considered at the design phase.

5 **ECOLOGICAL ENHANCEMENT**

National Planning Policy recommends that all developments incorporate ecological enhancement, in order to “pursue opportunities for securing measurable net gains for biodiversity” (NPPF, 2021), therefore consideration should be given to the following:

- Where possible, unlit linear features should be incorporated into soft landscaping to enhance foraging and commuting habitats for bats on site.
- Native species should be favoured within planting schemes of soft landscaped areas; including herbaceous perennials, annual plants, trees and shrubs. Suitable species are listed on the RHS website: <https://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/plants-for-pollinators-wildflowers.pdf>
- If native species are not practical, species with a known benefit to wildlife should be considered as an alternative, including nectar-rich and night-flowering species to encourage crepuscular insects which, in turn would provide a food source for bats. Suitable species are listed on the RHS website at the address above.
- Ongoing management of habitats can impact upon their value for wildlife. Abstaining from the use of pesticides and relaxing the intensity of habitat management, including hedgerows and grassland, can increase the resources provided to wildlife. In addition, wildflower meadows or flowering lawns should be incorporated. Once established, these require less maintenance (therefore less cost) than standard lawns as well as providing resources for wildlife. Seed mixes can be found here: <https://wildseed.co.uk/mixtures/category/meadow-and-grassland>
- Bird boxes should be incorporated onto new buildings and suitable trees on site. See <https://www.livingwithbirds.com/nest-boxes> for examples.
- Bat boxes may also be incorporated into any new buildings on site, or attached to existing trees. A mixture of box types may be installed to provide opportunities for both crevice and cavity roosting species including hibernation and maternity roost boxes. Boxes installed on trees should be positioned at least three metres above ground and facing in varying southerly directions. See <https://www.nhbs.com/4/bat-boxes> for suitable examples.
- A variety of invertebrate refugia can be incorporated into soft landscaped areas, this could include partially buried log piles, “bug hotels”, bee boxes, wildlife paving stones, butterfly hibernation boxes and general nesting aids.

6 REFERENCES

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- RSPB (2015) *Birds of Conservation Concern 4*. RSPB, Sandy, Beds.
- Stace, C.S. (2010) *New Flora of the British Isles, 3rd edition*. University Press, Cambridge.
- The National Biodiversity Network (NBN) Atlas WebSite. <https://nbnatlas.org/>

APPENDIX A : Protected and Priority Species

Legal protection is afforded to particular habitats and species (as well as designated Sites), see Appendix B. The legislation, and the habitats and species listed, vary between the different jurisdictions. Certain habitats and species are also considered to have some level of nature conservation importance, due to factors such as their rarity, vulnerability or declining population/status. This document uses the term 'priority habitats' and 'priority species', as they are those which should be considered as priorities for conservation (it should not be confused with priority habitats and species as listed in the EU Habitats Directive). Priority habitats and species are defined as those which are:

- 1) listed as a national priority for conservation (such as those listed as habitats and species of principal importance for the conservation of biodiversity);
- 2) listed as a local priority for conservation, for example in the relevant local Biodiversity Action Plan (BAP);
- 3) Red Listed using International Union for the Conservation of Nature (IUCN) criteria (e.g. in an all-Ireland Red List, in one of the UK Species Status Project reviews, in the Species of Conservation Concern Red List, Birds of Conservation Concern in Wales, or BWI/ RSPB Red List for Ireland and Northern Ireland (Birds of Conservation Concern in Ireland 2014 to 2019) or, where a more recent assessment of the taxonomic group has not yet been undertaken, listed in a Red Data Book);
- 4) listed as Near Threatened or Amber Listed e.g. in an all-Ireland Red List, in one of the UK Species Status Project reviews, in Birds of Conservation Concern in Wales, in the Species of Conservation Concern Amber List or BirdWatch Ireland (BWI)/RSPB Amber List for Ireland and Northern Ireland (Birds of Conservation Concern in Ireland 2014 to 2019);
- 5) listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or listed as a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or
- 6) endemic to a country or geographic location (it is appropriate to recognise endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place).

Most protected species are also considered to be priority species, although there are some exceptions. There are numerous priority habitats and species which do not receive any legal protection.

Note that the terms 'priority habitat' and 'priority species' used in this document differ from the following uses of the same terms:

- a) These terms were previously used to denote those habitats and species afforded the highest level of priority for conservation under the UK BAP; this has been superseded by the lists of habitats and species of principal importance for the conservation of biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, Section 7 of the Environment (Wales) Act 2016, or their equivalents in Scotland

(Nature Conservation (Scotland) Act 2004, Scotland's Biodiversity Strategy and the Scottish Biodiversity List¹⁵) and Ireland (Actions for Biodiversity – Ireland's National Biodiversity Plan 2017 -2021¹⁶; and Valuing Nature – A Biodiversity Strategy for Northern Ireland to 2020).

- b) The terms 'Priority Natural Habitat Type' and 'Priority Species' are used to denote specific lists of habitats and species under The Conservation of Habitats and Species Regulations 2017; these are defined in Articles 1(d) and 1(h) respectively of the Habitats Directive.

APPENDIX B : Relevant Legislation

The following text provides information on the key legislation, which is applicable to this survey.

The main wildlife legislation in the UK is as follows:

European Legislation

The relevant sections of the EC Directives and international conventions are summarised below:

- EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitat Directive 1992) as amended (92/43/EEC)

The Directive requires Member States to introduce a range of measures including the protection of species listed in the Annexes. The 189 habitats listed in Annex I of the Directive and the 788 species listed in Annex II, are to be protected by means of a network of Sites. Once adopted, these are designated by Member States as Special Areas of Conservation (SACs), and along with Special Protection Areas (SPAs) classified under the EC Birds Directive. The Habitats Directive introduces the precautionary principle; that disturbance to the designated Sites can only be permitted having ascertained no adverse effect on the integrity of the Site.

- EC Directive on the Conservation of Wild Birds (Birds Directive 1979) as amended (79/409/EEC)

The main provisions of the Directive includes; the maintenance of the favourable conservation status of all wild bird species across their distributional range.

- Bern Convention on the Conservation of European Wildlife and Natural Habitats (1979)

The Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.

UK Legislation

The sections of UK legislation considered to be of relevance include:

- The Conservation (Natural Habitats, and c.) Regulations 2017 (as amended)

This transposes the Habitats Directive into national law. The Regulations provide for the designation and protection of 'European Sites', and the protection of 'European protected species.

- The Wildlife and Countryside Act 1981 (as amended) (WCA)

This consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) in Great Britain.

- The Countryside and Rights of Way Act 2000 (CRoW)

This act strengthens wildlife enforcement legislation.

- The Protection of Badgers Act 1992

Species-Specific Legislation

Species specific legislation is provided in the Table below:

Species-Specific Wildlife Legislation

Feature/Species	Legislation	It is an offence to:
Plants	Sch. 8 Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> • Pick; • Uproot; • Trade; • Possess (for trade) Any wild plant listed.
Invasive weeds – Japanese knotweed, Himalayan balsam,	Sch. 9 Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> • Allow to spread.
Hedgerows	Hedgerow Regulations 1997.	Outlines a number of criteria for designation of 'important' hedgerows. 'Important' hedgerows cannot be removed without notifying the relevant body.
Breeding birds	Wildlife and Countryside Act 1981 (as amended). Countryside and Rights of Way Act 2000.	<ul style="list-style-type: none"> • Kill; • Injure; • Take; any wild bird, their eggs or nest (with the exception of those on Sch. 2).
Specially protected birds	Sch. 1 Wildlife and Countryside Act 1981 (as amended).	As above but includes: <ul style="list-style-type: none"> • Disturbing birds at their nest, or their dependent young.

Feature/Species	Legislation	It is an offence to:
Badgers	The Protection of Badgers Act 1992	<ul style="list-style-type: none"> • Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so; • Possess any dead badger or any part of, or anything derived from, a dead badger; • Intentionally or recklessly interfere with a sett by disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, causing a dog to enter a sett, or obstructing access to it. <p>A badger sett is defined in the legislation as “<i>any structure or place, which displays signs indicating current use by a badger</i>”.</p>
Bats	Sch. 5 Wildlife and Countryside Act 1981 (as amended). Conservation of Habitats and Species Regulations 2010 (as amended).	<ul style="list-style-type: none"> • 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 bat roosts.
Common amphibians	Sch. 5 and Sch. 9 Wildlife and Countryside Act 1981 (as amended). Countryside and Rights of Way Act 2000.	<ul style="list-style-type: none"> • Sell; • Transport; and • Advertise for sale.
Great crested newt	Sch. 5 Wildlife and Countryside Act 1981 (as amended). Conservation of Habitats and Species Regulations 2017 (as amended).	<ul style="list-style-type: none"> • Kill; • Injure; • Disturb • Destroy any place used for rest or shelter.
Common reptiles	Sch. 5 Wildlife and Countryside Act 1981 (as amended). Countryside and Rights of Way Act 2000.	Deliberate or reckless: <ul style="list-style-type: none"> • Killing; • Injuring • Sale.

Feature/Species	Legislation	It is an offence to:
Otter	Sch. 5 Wildlife and Countryside Act 1981 (as amended). Conservation of Habitats and Species Regulations 2017 (as amended).	<ul style="list-style-type: none"> Deliberately capture, injure or kill an otter; Disturb an otter in its breeding or resting place; Damage, destroy or obstruct an otter's breeding or resting place.
Water vole	Sch. 5 Wildlife and Countryside Act 1981 (as amended).	<ul style="list-style-type: none"> Deliberately capture, injure or kill; Disturb a water vole whilst it is in its breeding or resting place; Damage, destroy or obstruct a water vole's breeding or resting place.
White-clawed crayfish	Sch. 5 Wildlife and Countryside Act 1981 (as amended). Conservation of Habitats and Species Regulations 2017 (as amended).	<ul style="list-style-type: none"> Illegal to take or sell; disturb them in/or destroy their habitat.

In addition, species and habitats listed on the UK Post-2010 Biodiversity Framework (formally the UK BAP) are also considered. Details on these species and habitats can be found at: <http://jncc.defra.gov.uk/page-5705>.

Protected Sites

A network of protected Sites, at varying levels, have been put in place across the UK. Further details are provided below;

International importance

- Natura 2000

Natura 2000 is the name of the European Union-wide network of nature conservation Sites established under the EC Habitats and Birds Directives. This network will comprise Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

- Special Areas of Conservation (SAC)

SACs are designated under the EC Habitats Directive. The Directive applies to the UK and the overseas territory of Gibraltar. SACs are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs in terrestrial areas and territorial marine waters out to 12 nautical miles are designated under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). New and/or amended Habitats Regulations

are shortly to be introduced to provide a mechanism for the designation of SACs and SPAs in UK offshore waters (from 12-200 nm).

National importance

- Sites of Special Scientific Interest (SSSI)

The SSSI series has developed since 1949 as the national suite of Sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. Most SSSIs are privately-owned or managed; others are owned or managed by public bodies or non-government organisations. The SSSIs designation may extend into intertidal areas out to the jurisdictional limit of local authorities, generally Mean Low Water in England and Northern Ireland; Mean Low Water of Spring tides in Scotland. In Wales, the limit is Mean Low Water for SSSIs notified before 2002, and, for more recent notifications, the limit of Lowest Astronomical Tides, where the features of interest extend down to LAT. There is no provision for marine SSSIs beyond low water mark. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs have been renotified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

Regional/local importance

- Wildlife Sites

Local authorities for any given area may designate certain areas as being of local conservation interest. The criteria for inclusion, and the level of protection provided, if any, may vary between areas. Most individual counties have a similar scheme, although they do vary. These Sites, which may be given various titles such as 'Listed Wildlife Sites' (LWS), 'County Wildlife Sites' (CWS), 'Local Nature Conservation Sites' (LNCS), 'Sites of Importance for Nature Conservation' (SINCs), or 'Sites of Nature Conservation Importance' (SNCIs), together with statutory designations, are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined.

APPENDIX C : Methodologies

Assessment Method for Great Crested Newts

Ponds were evaluated using the Habitat Suitability Index (HSI) assessment method (Oldham et al, 2000). During a daytime Site visit, each pond was assessed against 10 key habitat criteria, or Suitability Indices (SI) as follows:

- SI1 Geographic area
- SI2 Pond area
- SI3 Pond drying
- SI4 Water quality
- SI5 % shoreline shade
- SI6 Presence of waterfowl
- SI7 Presence of fish
- SI8 Pond count within 1km
- SI9 Terrestrial habitat quality
- SI10 % macrophyte cover

Based on a standardised scoring system, each SI achieves a score of between 0 and 1, and these are used to calculate an overall score for that pond. The scores equate to a habitat suitability rating as per Table 5 below.

In general, ponds with high HSI scores are more likely to support GCN than those with low scores. This alone does not determine whether or not a pond should be subject to further survey, but rather provides an indication of habitat quality to aid professional judgment on survey requirements and is a useful tool for informing mitigation or ecological enhancement proposals.

Table 4: Summary of HSI Assessment Scale

HSI score	Pond Suitability	Occupancy Rate
<0.5	Poor	3%
0.5 – 0.59	Below average	20%
0.6 – 0.69	Average	55%
0.7 – 0.79	Good	79%
>0.8	Excellent	93%

Assessment Method for Bats

Following current good practice guidelines (Collins (ed) 2016), the assessment comprised a visual inspection of each of the trees and built structures, for the latter including any internal areas such as roof voids or cellars. For ease of reference, each structure was numbered B1, B2, B3 etc and trees were numbered T1, T2, T3 etc.

The location and description of any features such as holes, crevices or internal voids that could potentially be used by roosting bats was recorded and a search was made for any evidence of bat presence such as droppings or feeding remains. Binoculars, ladders, high powered torches and endoscopes were used where necessary to facilitate more detailed inspection of individual features.


Based on the number, location and type of any potential roost features, structures and trees were categorised as having negligible, low, moderate or high potential for roosting bats, or confirmed roost where direct evidence of bat presence was encountered. Evaluation of roost potential is necessarily subjective and relies on the professional judgment of the surveyor; however, the table below provides a useful guide to how this is informed.

Examples of characteristics that inform assessment of roost potential

Status	Typical characteristics
Negligible potential	<ul style="list-style-type: none">• Modern construction / immature trees• Lack of access points for bats• Situated within very poor quality foraging habitat• High levels of external lighting
Low potential	<ul style="list-style-type: none">• Small number of minor hole / crevice features suitable for opportunistic roosting• Lack of roof voids or small cluttered roof spaces• Features obscured by dense cobwebs• Unlikely to support breeding or hibernating bats• Situated within poor quality foraging habitat
Moderate potential	<ul style="list-style-type: none">• One or more hole / crevice features suitable for roosting, e.g. damaged soffits, uneven roof tiles• Access into large, dark internal spaces such as roof voids• Trees with small fissures and crevices in dead wood suitable for day roosting• Situated within or near to moderate/good quality foraging habitat




Status	Typical characteristics
High potential	<ul style="list-style-type: none"> • Old buildings / mature or veteran trees • Trees with woodpecker holes or deep fissures and crevices in dead wood • Structures with large, uncluttered roof voids • Traditional brick, stone or timber framed barns • Features suitable for large numbers of bats and/or several different species • Types of structure suitable for hibernation, e.g. caves, tunnels, ice houses etc • Low level of disturbance by humans • Little / no external lighting • Situated within good quality foraging habitat
Confirmed Roost	<p>Bats seen or heard within the roost feature during the survey</p> <p>Bat droppings, particularly if piled rather than scattered</p> <p>Feeding remains such as moth wings</p> <p>Existing record of roost at that location</p>




Guidance for assessing the overall value of potential development Sites for bats (Collins (ed), 2016)




Site Status	Description
 <p>Increasing Site value for bats</p>	<ul style="list-style-type: none"> • No features likely to be used by bats • Small number of potential roost Sites but unlikely to be suitable for maternity roosts or hibernacula • Isolated habitat that could be used by foraging bats • Isolated Site not connected by prominent linear features to suitable other/adjacent foraging habitats • Several potential roost Sites in buildings, trees or other structures • Habitat suitable for foraging bats (e.g. trees, water, scrub, grassland present) • Site is connected with the wider landscape by features that could be used by foraging/commuting bats (e.g. gardens backed by scrub or line of trees) • Buildings, trees or other structures (e.g. caves or underground structures) of particular significance for roosting bats • Site includes high quality foraging habitat (e.g. broadleaved woodland, tree-lined watercourses, parkland with mature trees and rough grass) • Site is connected with the wider landscape by strong linear features that could be used by commuting bats (e.g. hedgerows, river valleys) • Site is close to known roosts • Bats recorded or observed using an area for foraging or commuting close to a potential roost

APPENDIX D : Site Photographs

Description	Photograph
TN1	
D1	

Description	Photograph
D2 – obscured by tall ruderal vegetation, looking north	 A photograph showing a paved road on the left that curves into the distance. The road is bordered by a grassy verge and a wooden fence. To the right of the fence, there is a dense thicket of tall, green trees and bushes, which significantly obscures the view of the road ahead. The sky is blue with scattered white clouds.
D2 – looking north	 A photograph of a road curving to the left. The foreground is dominated by a grassy area with several tall, thin, brownish stalks of vegetation. In the background, there is a dense line of green trees and bushes under a cloudy sky.
D3	 A close-up photograph of dense, green vegetation. The plants have large, heart-shaped leaves and are growing in a thick, tangled mass. The lighting is bright, highlighting the various shades of green.

Description	Photograph
Southern boundary of site	
Small area of newly planted trees in the north	
View across the eastern field	

Description	Photograph
Scrub and tall ruderal on eastern boundary adjacent to the canal	 A photograph showing a dense thicket of tall, brownish-green vegetation, likely reeds or tall grasses, growing along the edge of a canal. The background shows a line of trees and a clear sky.
Canal	 A photograph of a canal winding through a lush, green landscape. The banks are covered in dense vegetation, including tall grasses and shrubs. The water in the canal is calm and reflects the surrounding greenery.
Newly planted trees south of the marina	 A photograph showing a line of newly planted trees in a grassy field. The sky is bright blue with scattered white clouds, and a vibrant rainbow is visible in the background, arching over the trees.