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Ecological Impact Assessment

Station Road

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1 EXECUTIVE SUMMARY

Ecosurv Ltd were instructed by Wienerberger Ltd to undertake an Ecological Impact Assessment (EclA) for the proposed development at Station Road, Warnham. The proposals are a small development of 24 residential properties including semi-detached houses and flats with associated infrastructure and landscaping.

The survey work and report has been undertaken by Harry Cuthbert MSc BSc (Hons). This EclA has been produced in accordance with the CIEEM Guidelines for Ecological Impact Assessment the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018). To inform this report on potential ecological impacts regarding the proposed site, previous information has been used, this includes multiple site visits undertaken in 2025, together with biological records provided by the Sussex Biodiversity Record Centre.

The site is centred on Grid Reference TQ1695634020 and can be accessed by Station Road. The survey area comprised of a small holding, featuring areas of modified grassland, bare ground, buildings and individual trees, Lowland mixed deciduous woodland is present to the peripheries of the site. The site is in a rural area, surrounded by deciduous and ancient woodland to the north and west of the site and to the east and north east of the site is Warnham Railway station and a brickworks. The wider landscape is predominantly agricultural uses with areas of woodland and the town of Horsham to the south.

The majority of habitats on site are of no more than site/local importance, with some areas of county and parish importance. With the overall significance of impacts in the absence of mitigation and compensation considered to be low.

The assessment considered the potential effects upon protected species arising from the development. The potential for impacts to occur on badger, great crested newt, breeding birds, bats, and other notable species have been assessed. Mitigation measures have been proposed to ensure that impacts are avoided or minimised and that where possible enhanced habitats for these species will be provided within the proposed landscaping of the site.

Through careful consideration of the potential impacts, it is concluded that the proposed development complies with current planning policy and that the legal implications arising from the residential development in respect of habitats and species have been addressed.

In order to ensure compliance, there is a requirement to secure the mitigation and compensation measures detailed within this report. The measures set out herein can be secured through appropriate conditions attached to any planning consent, and the development may therefore be delivered without harm to nature conservation interests. Specifically, it is anticipated that planning conditions would be used to secure:

- ❖ A District Level Licence for Great Crested newts will be required for the vegetation clearance when removing suitable habitats within the development as it will result in the destruction of GCN habitat and has the potential to kill/injure/disturb GCN.
- ❖ Habitat Monitoring and Maintenance Plan Landscape and Ecology Management Plan (HMMP): The creation and implementation of compensatory habitats should be guided and monitored by the HMMP. The HMMP will detail the establishment and long-term management of retained and newly created habitats to maximise benefits for wildlife. This should be prepared and put in place prior to operations commencing.

Table 1. EcIA Summary Table

Ecological Receptor	Value	Impacts	Magnitude	Mitigation	Residual Impact
Modified Grassland	Site	The proposals will result in the clearance of all the grassland on site.	High Negative Impact	Appropriate landscaping scheme to enhance floral diversity and existing foraging resource for birds, bats and invertebrates.	Negligible
Bare Ground	Local	The proposals will result in the clearance of all the bare ground on site	Medium Negative Impact	Appropriate landscaping scheme to enhance floral diversity and existing foraging resource for birds, bats and invertebrates.	Negligible
Individual Trees	Site	Removal of a majority of the individual trees onsite, with a line of trees retained within the eastern boundary.	Medium Negative Impact	Arboricultural methods to be adopted to avoid and minimise damage to root protection areas of the retained tree. See AMS documentation. Arboricultural protection to avoid and minimise impacts to retained trees.	Negligible
Priority Lowland Deciduous Woodland	County	To be retained.	Negligible	Areas of woodland to be protected by implementation of a 15m buffer zone. See section 8.2.10 Pollution, prevention and control measures, particularly in regard to dust deposition and surface water run-off to be implemented to avoid degradation of retained habitat. See section 8.2.6	Negligible
Ponds	Parish	GCN pond to be retained. Small duck pond to be removed.	Medium Negative Impact	Appropriate landscaping scheme to enhance floral diversity and existing foraging resource for birds, bats and invertebrates.	Negligible

Buildings	Site	To be removed	High Negative Impact	N/A	Negligible
Badger	Local	Loss of some foraging habitat. Entrapment of animals in open excavations. Potential disturbance/ destruction of setts if established within the interim period between construction and planning.	High Negative Impact	An extensive badger survey was carried out on the 15/09/2025 following the initial assessment that determined further inspection was required. This was done with a thorough and extensive check for badger activity, taken place throughout the development area, and in habitats present within a 30m buffer zone of the site. No evidence of badgers, setts or field sings indicative of badger activity were noted. However, snuffle holes were still present showing that badgers are likely within the local landscape. Any trenches or voids are dug and filled within the same working day. Should this not be possible, an adequate means of escape should be provided and/ or the trench should be securely covered overnight.	Negligible
Bats Roosts in Trees	Site	Indirect impacts to potential roosts in retained trees.	Low Negative Impact	The provision of external bat roosts within the retained trees/hedgerows has the potential to increase the number of bats within the local environment together with the proposed habitats post development. See section 8.2.9	Negligible
Bats: Foraging and Commuting	Site	Loss of foraging habitat through direct habitat clearance. Increased light spill on woodland habitats may alter foraging and commuting behaviour.	High Negative Impact	Low level Lighting Strategy to be adopted throughout the development. See section 8.2.1. The landscaping scheme should seek to remain mature trees along the site boundaries. Trees identified for retention should be protected from damage throughout construction through arboricultural	Negligible/ Minor

				methodology and protection. These trees should be protected in the long term through restrictive titles on properties. The additional floristic species within the gardens and soft landscaping of the development would increase the insect population within the site and as a result the bat prey species. The provision of integrated bat roosts within the new structures has the potential to increase the number of bats within the local environment together with the proposed soft landscaping of the development, of greater value than the existing arable usage.	
Birds	Site	Destruction of active nest sites. Displacement of breeding territories. Loss of suitable nesting habitat through tree/vegetation clearance works.	High Negative Impact	Vegetation clearance works should be undertaken outside of the nesting bird season (March – August inclusive) or following a nesting bird check by suitably qualified ecologist. Establishment of soft landscaping in the longer term will offset and enhance opportunities for nesting and foraging from the existing. The provision of integrated bird nesting boxes within and to the new structures has the potential to maintain the local bird populations within the local environment together with proposed landscaping and habitats on site post development. See section 8.2.2	Negligible/ Minor
GCN	District	Loss of optimal habitat within roaming range from known breeding ponds. Killing/injuring individuals.	High Negative Impact	A District Level Licence is to be obtained for the vegetation clearance as it will result in the destruction of GCN habitat and has the potential to kill/injure/disturb GCN. Site clearance should be done so sensitively using Reasonable Avoidance Measures. See section 8.2.3.	Negligible

Reptiles	Parish	Loss of habitats suitable to support reptiles with confirmed presence. Loss of habitats within these areas represents the removal of foraging, refuge, basking and possible breeding and hibernation sites. Killing/injuring individuals	High Negative Impact	Reptile mitigation strategy to be implemented to include exclusion fencing, translocation, destructive search methodology enhancement of adjacent habitats and receptor sites. See section 8.2.9.	Negligible
Hazel Dormouse	Site	Encroachment into adjacent suitable habitats.	High Negative Impact	Sensitive clearance of suitable habitats. See section 8.2.5	Negligible
Hedgehog	Local	Loss of some foraging and hibernation habitat. Direct killing and injury through habitat clearance works.	High Negative Impact	Sensitive clearance of suitable habitats. See section 8.2.4. Created habitats within development area has the potential to provide additional feeding resources and nesting habitat within the site for this mammal species.	Negligible
Giant Hogweed & Himalayan Balsam	Notifiable Species	Potential spread of a Schedule 9 Invasive Plant Species through clearance and ground works.	High Negative Impact	Method Statement in regard to proposed woodland clearance works and proximity to invasive plant species. See section 8.2.7 & 8.2.8.	Negligible

2 INTRODUCTION

Ecosurv Ltd were instructed by Wienerberger Ltd to undertake an Ecological Impact Assessment (EclA) for a proposed development at the Station Road, Warnham.

The site is centred on Grid Reference TQ1695634020 and can be accessed by Station Road (Figure 1). The survey area comprised of a small holding, featuring areas of modified grassland, bare ground, buildings and individual trees, Lowland mixed deciduous woodland is present to the peripheries of the site. The site is in a rural area, surrounded by deciduous and ancient woodland to the north and west of the site and to the east and north east of the site is Warnham Railway station and a brickworks. The wider landscape is predominantly agricultural uses with areas of woodland and the town of Horsham to the south.

The proposals are for the development of multiple residential houses and flats with associated infrastructure and landscaping. The proposals will involve the clearance of most of the habitat on site.

The survey work and report has been undertaken by Harry Cuthbert MSc BSc (Hons), in accordance with the CIEEM Guidelines on Ecological report writing (CIEEM, 2017) and BS 42020:2013 (BSI, 2013), and the CIEEM Guidelines for Ecological Impact Assessment the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018).

To inform this report on potential ecological impacts regarding the proposed extension of the site, various sources of previous information have been used, this includes; site visits undertaken in April-September 2025, together with biological records provided by the Surrey Biodiversity Centre.

2.1 Location



*Figure 1. Site location plan. Red line shows the area proposed for development.
(© Crown Copyright and MAGIC database rights 2026. Ordnance Survey 100022861).*

3 LEGISLATION

3.1 Summary of legislation

This section summarises the legislation, which is relevant, in ecological terms, to this assessment, i.e. legislation relevant to species present or potentially present within the survey area is included here along with legislation relevant to protected sites in the vicinity.

- ❖ Wildlife and Countryside Act 1981 (as amended);
- ❖ Countryside and Rights of Way (CROW) Act 2000;
- ❖ The Protection of Badgers Act (1992);
- ❖ Wild Mammals (Protection) Act 1996;
- ❖ The Conservation of Habitats and Species Regulations 2010(as amended);
- ❖ Environment Act 1995;
- ❖ Natural Environment and Rural Communities (NERC) Act 2006.

The most significant legislation governing the protection of British wildlife is the Wildlife and Countryside Act 1981, the Countryside Rights of Way Act 2000 and The Conservation of Habitats and Species Regulations 2017. The Wildlife and Countryside Act, as amended mainly by the Countryside Rights of Way Act, protects animal species listed in Schedule 5 and plant species in Schedule 8 of the Act from being killed, injured, and used for trade. The provisions of this act further protect certain species, such as great crested newts and bats from being disturbed or taken from the wild, as well as protecting elements of their habitats. The Act also specifies that offences occur regardless of whether they were committed intentionally or recklessly. The parts of this legislation that apply to most reptile species are in regard to killing, injury and trade only and do not protect their habitat, nor are they protected from disturbance or from being taken from their habitat.

The Conservation of Habitats and Species Regulations is the English enactment of European legislation and provides similar but subtly different protection for species listed on Schedules 2 and 4 of those regulations. The provisions of this act complement those of the Wildlife and Countryside Act. Species to which these provisions apply are the European Protected Species. Activities that might cause offences to be committed can be legitimised by obtaining a licence from the relevant statutory body.

The following EC Directives and international conventions are applied by some of the above UK Acts and Regulations:

- ❖ Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and wild fauna and flora (as amended);
- ❖ Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (as amended);
- ❖ Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) (1979) (as amended);
- ❖ Convention on the Conservation of Migratory Species of Wild Animals (the Bonn Convention) (1979) (as amended);

- ❖ Agreement on the Conservation of Bats in Europe (1999) (as amended).

3.2 National Planning Policy

The National Planning Policy Framework (NPPF) published in 2012 and revised in February 2025 states that policy should contribute to and enhance the natural and local environments by:

- ❖ Protecting and enhancing valued landscapes, geological conservation interests and soils;
- ❖ Recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including economic and other benefits of best and most versatile agricultural land, and trees and woodland;
- ❖ Maintaining the character of the undeveloped coast, while improving public access where appropriate;
- ❖ Minimising impacts on and providing net gains for biodiversity, included by establishing coherent ecological networks that are more resilient to current and future pressures.
- ❖ preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- ❖ remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

The NPPF also states that planning for biodiversity should be done at a landscape scale across local authority boundaries, identifying components of the local ecological network including nationally and locally important sites for biodiversity and wildlife corridors and stepping stones that connect them. Of particular significance with the revised NPPF 2025 requires opportunities to incorporate biodiversity improvements in and around development, rather than simply making it optional.

187. When determining planning applications, local planning authorities should apply the following principles:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Further details on the legislation protecting species of British wildlife and habitats relevant to this assessment can be found in section 12 of this report.

4 METHODS

4.1 Overview

EclA is a process of identifying, quantifying, and evaluating potential effects of development-related or other proposed actions on habitats, species, and ecosystems. The findings of an assessment assist the competent authorities understand ecological issues when determining applications for consent.

The overall aims of the EclA are to:

- ❖ Determine the importance of ecological features affected, through survey and/or research and with reference to available contextual information;
- ❖ Assess impacts potentially affecting important features;
- ❖ Characterise the impacts, e.g. extent, magnitude, duration, reversibility, timing, and frequency;
- ❖ Identify cumulative impacts;
- ❖ Identify significant effects of impacts in the absence of any mitigation.

The EclA has used a number of data sources, including a desktop study and site visits and supporting information, which are summarised in the table below.

Table 2. Summary of Survey Effort Undertaken to inform the EclA.

Report/ Survey	Surveyors	Date of Completion
Preliminary Ecological Appraisal & Tree Survey	HC & HD	19/03/2025
GCN Bottle Trapping	HC & HD	24/04/2025
GCN Bottle Trapping & Reptile survey set up	HC & HD	25/04/2025
GCN Bottle Trapping & Reptile Survey	HC & HD	15/05/2025
GCN Bottle Trapping & Reptile Survey	HC & HD	16/05/2025
GCN Bottle Trapping & Reptile Survey	HC & HD	11/06/2025
GCN Bottle Trapping & Reptile Survey	HC & HD	12/06/2025
Reptile Survey	HC & HD	09/07/2025
Reptile Survey, BNG Walkover & Extensive Badger check	HC & HD	15/09/2025
Reptile Survey	HC & HD	17/09/2025

The preparation of this report has been conducted by Harry Cuthbert MSc BSc (Hons).

All survey and assessment work has been completed in line with official guidelines produced by Natural England and the Chartered Institute for Ecology and Environmental Management, and British Standard document BS 42020: 2013 'Biodiversity – Code of practice for planning and development.'

4.2 Limitations

Desk study limitations

Species specific groups were not contacted for their detailed records within the survey area. However, the combination of data obtained primarily from the local environmental records centre was felt to be sufficient to achieve the objectives of the report.

4.3 Survey Area

The application site is centred on Grid Reference TQ1695634020 and can be accessed by Station Road. The assessment focused on the application site, as well as all habitats in the immediate surrounding area (where access was available).



Figure 2. Satellite Image of the surveyed area. Application site boundary is shown by the red line.

(Image taken from Google Earth Pro: ©2026 Map Data Google 2026)

4.4 Desktop Study

The desktop study collected publicly available information regarding the biodiversity of the area, including the habitat structure of the site and wider landscape, as well as the presence of any statutory or non-statutory designated sites, using the Multi-Agency Geographic Information for the Countryside (MAGIC) resource. Biological records within 2km of the site were also requested from the Sussex Biodiversity Record Centre, which included records of protected and notable species and any nearby non-statutory designated sites not available through MAGIC.

4.5 Field survey

The field survey followed the CIEEM GPEA document (CIEEM, 2013) and BS 42020:2013 document (BSI, 2013). Field surveys have been carried out by Harry Cuthbert MSc BSc (Hons) and Harriet Davis BA (Hons) on the 19th March & 15th September 2025. The survey area included the site and extended into areas which were deemed to be a potential receptor of ecological impact due to the proposed development.

Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2010) with target notes made to describe features of interest.

In addition to mapping habitat types and dominant flora, the potential for the survey area to support any legally protected faunal species and/or faunal species of nature conservation importance, e.g. BAP priority species, was assessed. Detailed surveys were not undertaken; rather the potential for the survey area to support each species/species group was assessed.

Features that would likely support protected species, holes in trees, drainage ditches, ponds, embankments etc. were all examined for the possible presence of species known to utilise these features, in accordance with the methodologies outlined in section 4.6. In addition, field signs or sightings of such species were recorded as seen.

Key features identified during the survey are summarised in the form of Target Notes. Nomenclature for plant species names is taken from Stace (1991) and the Botanical Society of the British Isles (BSBI) plant checklist (2007).

4.6 Protected Species Surveys

Badgers: An assessment of the site and surrounding habitats (where access was available), with particular focus on any areas of dense vegetation, was carried out in order to identify any evidence of badgers, including:

- ❖ the presence of any setts
- ❖ well-used runs/tracks
- ❖ supplementary evidence, such as hairs or prints
- ❖ badgers themselves

Bats: Any habitats suitable for bats to roost, commute and forage both on site and in the surrounding area (where access was available) to determine the suitability of the site for bats and further survey requirement in accordance with the current Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists Good Practice Guidelines 4th Ed. (Collins, 2023).

Evidence of roosting bats can include: bat droppings; staining around access points; small scratches around an entrance hole; audible squeaking at dusk or in warm weather; smoothening of surfaces around cavity or an entrance hole; distinctive smell of bats.

The bat risk assessment was completed using ladders, binoculars and a powerful torch. An endoscope was also available to check any small gaps/cracks for evidence of bats.

An external inspection of the structures on site was carried out, focussing on features that may provide roosting opportunities or access points to roosting features internally, such as the roof and ridge tiles. An internal inspection was also carried out, with any accessible roof spaces present checked for any evidence of bats.

The structures were then categorised based on their suitability and potential for roosting bats, which was evaluated in accordance with the BCT guidelines detailed in Table 3 and criteria outlined in the Bat Mitigation Guidelines.

Table 3. Guidelines for assessing bat roosting potential of structures and trees.

Suitability	Habitat description	Further action required?
Negligible	Negligible habitat features on site likely to be used by roosting bats.	No further bat risk assessment effort or bat activity surveys are required.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation).	Structures: One bat activity survey is required to determine whether the structure is being utilised by roosting bats; this may be a dusk or dawn survey. This survey must occur between May and August. The discovery of a roosting bat during this single bat activity survey will require further survey effort.
	A tree of sufficient size and age to contain PRFs, but with none seen from the ground or features seen with only very limited roosting potential.	Trees: No further bat risk assessment effort or bat activity surveys are required.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection conditions and surrounding habitat, but unlikely to support a roost of high conservation status.	Two bat activity surveys are required to determine whether the structure or tree is being utilised by roosting bats; this should be comprised of one dusk and one dawn survey. One survey must occur between May and August.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Three bat activity surveys are required to determine whether the structure or tree is being utilised by roosting bats; this should be comprised of one dusk and one dawn survey, with an additional survey (either dusk or dawn). Two surveys must occur between May and August.

In addition, a Ground Level Tree Assessment (GLTA) of any trees on site was carried out. This involves a detailed inspection of the exterior of the tree from the ground to look for features that bats could use for roosting (PRFs) to determine the suitability of the site for bats and further survey requirement in accordance with the current Bat Conservation Trust (BCT) survey guidelines (Collins, 2023). PRF types that can be exploited by bats include, but not exclusively; woodpecker holes, knot holes, wounds, cankers, forks, lifting bark, cracks, fluting and ivy.

The trees were then categorised based on their suitability and potential for roosting bats, which was evaluated in accordance with the BCT guidelines detailed in Table 4 and criteria outlined in the Bat Mitigation Guidelines.

Table 4. Guidelines for assessing the potential suitability of trees

Suitability	Roosting habitats in Trees	
None	Either no PRFs in the tree or highly unlikely to be any.	
FAR	Further assessment required to establish if PRFs are present in the tree by means of an elevated search to inspect PRFs either by climbing or the use of equipment such as ladders, MEWPS or scaffolding towers.	
PRF	A tree with at least one PRF present	
	PRF-I	PRF-M
	PRF is only suitable for individual bats of very small numbers of bats either due to size or lack of suitable surrounding habitats.	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

Further survey effort to determine the presence/likely absence of bats and/or mitigation is site specific and should be carried out in accordance with the BCT Bat Survey Guidelines, however the following can be used as a general guide:

Table 5. Guidelines for further survey effort

Suitability	Further Survey Effort	Timing
PRF-1	No further surveys required.	
Low roost suitability	One dusk emergence survey	May to August. Note: The discovery of a roosting bat during this single bat activity survey will require further survey effort.
Moderate roost suitability	Two separate dusk emergence surveys.	May to September with at least one of the surveys between May and August. Surveys should be at least three weeks apart, preferably more. Note: The discovery of a roosting bat during this single bat activity survey will require further survey effort.
High roost suitability or PRF-M	Three separate dusk emergence surveys.	May to September with at least two of the surveys between May and August. Surveys should be at least three weeks apart, preferably more.

**If the structure has been classified as having low suitability for bats, an ecologist should make a professional judgement on how to proceed based on all of the evidence available and the balance of probabilities. Thought processes and decision making should be adequately recorded as a paper trail. If all areas (including voids, cracks and crevices) of a structure have been inspected and no evidence found (and is unlikely to have been removed by weather or cleaning or be hidden), then further surveys are not appropriate.*

If complete inspection is not possible then proportionality must be considered. A single survey during the summer months may be adequate to ensure nothing obvious has been missed and/or precautionary measures could be applied during works. This is likely to be a proportionate approach then carrying out multiple surveys.

Great Crested Newts: The habitats on site were assessed in regard to their suitability to support GCN. Potential refugia (such as logs, stones, discarded building materials etc.) present were also checked for the presence of GCN.

Any ponds on-site or within 500m of the site boundaries (where access was available) were assessed for their habitat suitability for GCN, utilising the modified Great Crested Newt Habitat Suitability Index (ARG UK 2010; Oldham et al. 2000). The Habitat Suitability Index (HSI) is used to evaluate the suitability of ponds to support GCN. It is a numerical index between 0 and 1, where 0 indicates completely unsuitable habitat and 1 represents optimal habitat. The HSI score is then utilised to define the suitability of the pond on a categorical scale. This system provides an indication as to the suitability of ponds to support GCN but is not precise enough to conclude that a pond with a high score will definitely support GCN, whilst those with a low score will definitely not.

An HSI assessment was completed for Ponds 1-5. The results of the HSI assessment are discussed within Section 6.3.4 of this report, with the calculation of the HSI score for the pond provided within the Appendices.

Pond Survey Guidelines

All surveys were carried out in accordance with Natural England guidelines to determine presence/likely absence of GCN using the traditional method of surveying ponds for the presence of GCN using at least three survey methods between mid-March and mid-June as follows;

- Four visits during suitable weather conditions;
- Surveys to take place mid-March to mid-June, with at least two visits during approximately mid-April to mid-May (though this is general guidance covering the UK and the 'newt season' tends to be later with increasing latitude and altitude); and,
- A minimum of three survey methods per visit if possible (for example torch survey, bottle trapping, hand netting or egg searches). A description of the survey methods used are detailed below;

Survey Methods

Bottle trapping: Two litre plastic bottle traps were placed around the margins of each waterbody where the habitat was considered most likely to support newts and the water depth was adequate, maintaining an average of 2m intervals between traps where possible to maximise trapping efficiency. The traps were set at dusk and then inspected and removed the following morning. The number of traps used per visit was dependent upon the volume of water present in the pond on each visit and in consideration of health and safety concerns such as flooding and access

Torch survey: Torch surveys using high power (1, 000, 000 candle power) torches involved slowly walking around the perimeter of a pond, shining the torch into the water and recording the number and species of any newts observed.

Egg Search: Egg searches were carried out within all ponds which had suitable vegetation. Suitable egg-laying plants are those that have broad, pliable, submerged leaves such as grasses and broad-leaved herbs. Rushes and sedges provide poor egg-laying habitat due to the erect nature and relatively small size of the stems and leaves.

Sweep Netting: Using a long-handled net, GCN can be captured by sampling the area around the pond edge, allowing at least 15 minutes of netting per 50m of shoreline. Studies indicate that it is much less effective at detecting adult GCN than bottle trapping, torch survey and egg search but it is a useful additional technique. Netting is also a recommended method for finding larvae during late summer.

If GCN are found during any of the first four survey visits, an additional two survey visits may be required to undertake a population size class assessment. This would include a further visit between mid-April to mid-May and a further visit during the mid-March to mid-June period. The requirement to undertake a further two visits depends upon a combination of the following factors;

- type of impact (temporary or permanent)
- nature of the impact (i.e. breeding ponds and/or terrestrial habitat lost or damaged)
- distance of the development site from the waterbodies; and,
- area of habitat to be lost or damaged.

Surveyors, Timing and Weather Conditions

Table 6. GCN Survey Summary

Survey Method	Date	Surveyors	Min/ Max Air Temperature (°C)	Weather Conditions
Terrestrial Habitat Assessment and Pond HSI Assessment	19-03-2025	Harry Cuthbert Harriet Davis	N/A	Mild
Pond Surveys				
Visit 1	23 rd / 24 th April 2025	Harry Cuthbert Harriet Davis	11 – 14	Fine, 40% Cloudy
Visit 2	24 th / 25 th April 2025	Harry Cuthbert Harriet Davis	13 – 16	Fine, dry 50% cloud
Visit 3	14 th / 15 th May 2025	Harry Cuthbert Harriet Davis	16 – 21	Fine, clear
Visit 4	15 th / 16 th May 2025	Harry Cuthbert Harriet Davis	16 – 20	Fine, 30% cloud
Visit 5	10 th / 11 th June 2025	Harry Cuthbert Harriet Davis	13 - 21	Overcast

Visit 6	11 th / 12 th June 2025	Harry Cuthbert Harriet Davis	15 - 22	Overcast
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Breeding Birds: The habitats on site were assessed to determine their suitability for nesting, with a check carried out for the presence of any active nests or any evidence of nesting behaviour.

Reptiles: The site was assessed in regard to its suitability to support reptiles, which is largely based on an assessment of the habitats present on site and whether they afford sufficient opportunities to support basking, foraging and sheltering. Any refugia present was also checked for the presence of reptiles or evidence of reptiles, such as sloughs (shed skins).

Presence/ absence surveys were undertaken was based on methodology detailed in the Herpetofauna Workers Manual and the Froglife Advice Sheet 10. Methods involved a search for basking reptiles on / under naturally occurring and strategically positioned artificial refugia. These were placed in locations that offered the most suitable habitat for common reptiles, i.e. structurally diverse grassland habitats with areas of bare ground/short vegetation or scrub features.

All of the surveys were undertaken in suitable weather conditions within the recommended survey period by suitably experienced ecologists. Surveys were carried out between April and September 2025. On each of these occasions the number of reptiles observed within the site and associated with each artificial refuge was recorded. Weather conditions are summarised in table 7 below.

Table 7. Reptile Survey Weather Conditions

Date	Surveyors	Survey No.	Time	Temperature °C	Precipitation	Cloud Cover (Oktas)	Wind (Beaufort)
25/04/2025	HC/ HD	Setup	Pm	14	None	4	3
15/05/2025	HC/ HD	1	Pm	16	None	5	3
16/05/2025	HC/ HD	2	am	17	None	1	2
11/06/2025	HC/ HD	3	pm	20	None	7	2
12/06/2025	HC/ HD	4	am	25	None	7	2
09/07/2025	HC/ HD	5	pm	23	None	6	1
15/09/2025	HC/ HD	6	Pm	18	None	2	3
17/09/2025	HC/ HD	7	am	13	Light rain	7	3

In addition, these surveys also followed the guideline's recommendations by:

- ❖ Approaching refugia downwind and avoiding casting a shadow and with care so as to not disturb basking animals when checking; and

- ❖ That lifting and replacing the refugia, to check for the presence of reptiles underneath in hot weather is undertaken with care, to avoid potential harm or injury to animals beneath.

Any alternative basking material present within the site (for example tipped and demolition materials) were also checked for the presence of reptiles.



Figure 3. Location of artificial refugia

Dormouse: An assessment of the habitats to be impacted was carried out to determine their suitability for dormice in terms of their vegetation structure and species composition, along with identifying any evidence of dormice presence, such as characteristically chewed nuts, dormice nests or dormice themselves.

Other Wildlife: In accordance with good practice, the site was checked for the presence of any other protected/notable species, with particular regard to any other species highlighted in the desktop study.

Invasive Species: The site was also surveyed for the presence of any invasive, non-native flora or fauna.

4.7 Zone of Influence

The potential impact of a development is not always limited to the boundaries of the site concerned. The development may also have the potential to impact on ecologically valuable sites, habitats, or species beyond the site boundaries. The area over which a development may impact ecologically valuable receptors is known as the Zone of Influence (ZoI).

The ZoI is determined by the source/type of impact, a potential pathway for that impact and the location and sensitivity of the ecologically valuable receptor beyond the boundary. For the majority of (unmitigated) impacts

identified as part of the Proposed Development, the Zol is generally considered to be the application site and immediately adjacent areas.

In ecological terms, the Zol can also vary considerably depending upon the species potentially affected by the Proposed Development. For example, some species may be confined to a specific location whilst others, such as birds and bats are more mobile and can occupy larger territories or home ranges. The Zol is likely to be influenced by the presence of dispersal barriers, such as roads and hardstanding, which either stop or reduce the likelihood of animals crossing it. As a consequence, this could isolate areas with potentially suitable habitat within the application site due to fragmentation.

The Zol for species or species groups was determined by research and the professional judgement of the ecologist. For example, common lizards (*Zootoca vivipara*) have restricted mobility and generally occupy smaller home ranges (up to 700m) (Langton and Beckett, 1995). The Zol for each species or species group is identified in the relevant section from Section 6.3 onwards.

4.8 Assessment methodology Biodiversity value

The CIEEM Guidelines

These guidelines provide a framework criterion for determining the value and importance of each potential ecological receptor found within the survey area.

Various characteristics can be used to identify important biodiversity features (sites, habitats, and species) that are likely to represent potentially significant constraints to the development project. These include a feature's:

- ❖ Rarity at various geographical scales;
- ❖ Threat status and vulnerability at various geographical scales;
- ❖ Diversity and/or its synergistic associations;
- ❖ Population size, and;
- ❖ Location in relation to its' known geographical distribution and range at various geographical scales.

The characteristics listed above help define a features' conservation status which can then be used to help determine its biodiversity value. CIEEM (2006) provides further information on how the relative value and importance of a receptor can be determined and states that its biodiversity value should be measured against published selection criteria where available.

It is also useful to distinguish between the biodiversity value of a receptor and its legal status. Features of high biodiversity value may not necessarily attract legal protection and vice versa. For example, a viable area of ancient woodland is likely to be considered of high biodiversity value even if it does not receive any formal statutory designations.

In the evaluation of biodiversity value, reference is also made to HA, UK and Local BAPs, inclusion on national or county Red Data Books, and to conservation status (such as nationally notable/scarce, etc.). However, the inclusion within a BAP reflects the fact that the population of the species/habitat concerned is in a sub-optimal state (and hence that conservation action is required) and does not necessarily imply any specific level of value. Despite this, priority BAP species/habitats may represent a significant ecological constraint if their presence triggers planning guidance implications (as outlined above).

In accordance with CIEEM (2006), each biodiversity feature should be assessed as valuable, or potentially valuable, based on the following geographic frame of reference (some examples of ecological receptors that may be potentially valuable at each geographical scale are provided below):

- ❖ International e.g. biodiversity feature that warrant designation of an area as a SPA, SAC, or Ramsar site;
- ❖ National (i.e. UK), e.g. biodiversity feature that warrants designation of an area as a SSSI;
- ❖ Regional, e.g. biodiversity features valuable at a regional level e.g. South East England;
- ❖ County, e.g. biodiversity features valuable at a county (i.e. West Sussex) level;
- ❖ District, e.g. biodiversity features of value at the district (i.e. Horsham) level;
- ❖ Parish, e.g. biodiversity features of value at the parish (i.e. within ~5km) level;
- ❖ Local, e.g. biodiversity features of value in a local (i.e. parish or within ~5km of the scheme extent) context;
- ❖ Site, e.g. biodiversity features of value within the immediate survey area of the scheme only;

Table 8. Determination of Biodiversity Value

Scale	Species	Habitat
International	A regularly occurring population of an internationally important species, which is threatened or rare in the UK, where the population is a critical part of a wider population or where a species is at a critical phase in its life cycle at this scale.	An internationally designated site, i.e. SAC, SPA, Ramsar, or one proposed for designation. Sites supporting areas of priority habitats which are scarce at an international level or where it is needed to maintain the viability of a larger area at that level.
National	A regularly occurring population/number of a nationally important species which is threatened or rare, where the population is a critical part of a wider population or where a species is at a critical phase in its life cycle at this scale. A regularly occurring population of a nationally important species on the edge of its natural range. A species assemblage of national significance.	A nationally designated site, i.e. SSSI or one that meets the published criteria. Sites supporting areas of priority habitats which are scarce at a national level or where it is needed to maintain the viability of a larger area at that level.
Regional	A regularly occurring, locally significant population of a species listed as being nationally scarce. A regularly occurring, locally significant number of a regionally important species or where the population is a critical part of a wider population or where a species is at a critical phase in its life cycle at this scale. A species assemblage of regional significance.	Sites supporting a viable area of a priority habitat which is scarce at a regional level or where it is needed to maintain the viability of a larger area at that level.

County	Any regularly occurring, locally significant population of a species which is listed in a county Red Data Book or BAP on account of its rarity. A regularly occurring, locally significant number of a county important species or where the population is a critical part of a wider population or where a species is at a critical phase in its life cycle at this scale. A species assemblage of county significance.	A County designated site or one that meets published criteria. Sites supporting a viable area of a priority habitat which is scarce at a county level or where it is needed to maintain the viability of a larger area. Local Nature Reserves, Local Wildlife Sites/potential Local Wildlife Sites
District	A population of a species that is listed in a district BAP because of its rarity in the locality. A species assemblage of district significance. A regularly occurring, locally significant number of district importance or where the population is a critical part of a wider population or where a species is at a critical phase in its life cycle at this scale.	Sites/features that are scarce within the district. Areas of Semi Natural Ancient Woodland, for example.
Parish	Populations or species assemblages considered to enhance the ecological resource within the context of the Parish, e.g. a breeding bird assemblage.	Areas of habitat considered to appreciably enrich the habitat resource within the context of the Parish, or which buffer those of a more important nature.
Local	Species that contribute to local biodiversity but are not exceptional in the context of the parish	Habitats that contribute to local biodiversity but are not exceptional in the context of the parish
Site	Populations or species assemblages insufficient to be considered in the wider context. Those which are unexceptional and common to local area.	Habitats or areas of habitat insufficient to be considered in the wider context. Those which are unexceptional and common to the local area.

4.9 Impact Assessment

In the assessment of significance of impact, consideration has been given both to the magnitude of impact and to the sensitivity of the receiving environment or species. The sensitivity of a feature was determined with reference to its level of importance although other elements have been taken into account, where appropriate. Methods of impact prediction used indirect measurements, correlations, expert opinion, and information from previous developments. Impacts include those that are predicted to be direct, indirect, temporary, permanent, cumulative, reversible or irreversible.

The magnitude of an impacts has been assessed for each element of the proposal. A definition of the magnitude impacts is presented in Table 9 and includes positive impact criteria in accordance with CIEEM guidance. The magnitude of each impact was assessed independently of its value or statutory status.

Table 9. Magnitude of Impact

Magnitude	Criteria
High Negative	The change is likely to permanently, adversely affect the integrity of an ecological receptor, in terms of the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and/ or the population levels of species of interest.
Medium Negative	The change is not likely to permanently, adversely affect the integrity of an ecological receptor, but the effect is likely to be substantial in terms of its ecological structure and function and may be significant in terms of its ecological objectives. Likely to result in changes in the localised or temporary distribution of species assemblage or populations but not affect the population status at a regional scale or permanently.
Low Negative	The change may adversely affect the ecological receptor, but there will probably be no permanent effect on its integrity and/or key attributes and is unlikely to be significant in terms of its ecological objectives. Impacts are unlikely to result in changes to the species assemblage or populations, but core species more vulnerable to future impacts.
Negligible	The change may slightly adversely affect the receptor, but will have no permanent effect on the integrity of the receptor or its key attributes. There are no predicted measurable changes to the species assemblage or population and the effect is unlikely to result in an increased vulnerability of the receptor to future impacts
Positive	The change is likely to benefit the ecological receptor and/or enhance the biodiversity resource of the receptor.
High Positive	The change is likely to restore an ecological receptor to favourable conservation status, contribute to meeting BAP objectives (local and national) and/or create a feature that is of recognisable value for biodiversity.

The level of significance of impacts predicted on ecological receptors is an important factor in influencing the decision-making process and determining the necessity and/or extent of mitigation measures. Impacts can be beneficial or adverse, either improving or decreasing the ecological status health or viability of a species, population or habitat. In general, an adverse impact significance greater than or equal to Moderate would require specific mitigation to be undertaken to ameliorate the impact to acceptable levels.

The significance of an impact was determined according to the matrix of importance and magnitude as illustrated in Table 10.

Table 10. Significance of Impacts.

Magnitude/ Importance	High Negative	Medium Negative	Low Negative	Negligible	Positive	High Positive
International	Major	Major	Moderate	Negligible	Moderate	Major
National	Major	Major	Moderate	Negligible	Moderate	Major
Regional	Major	Moderate	Minor	Negligible	Minor	Moderate
County/ District	Moderate	Moderate	Minor	Negligible	Minor	Moderate

Parish/ Local	Minor	Minor	Minor	Negligible	Minor	Minor
Site	Minor	Negligible	Negligible	Negligible	Negligible	Negligible

5 DESKTOP STUDY

5.1 Desktop Study

5.1.1 Statutory Protected Sites

There are two statutory sites within 2km of the proposed development, with the closest being Warnham Local Nature Reserve.

A summary of the sites is provided in table 11 below, with their location presented on the map in figure 4.

Table 11. Summary of Surrounding Statutory Protected Sites

Name	Features	Distance	Impact
Sites of Special Scientific Interest (SSSI's)			
Warnham	The Langhurst Wood brick pit exposes the lower Weald Clay Group above the Horsham Stone and is one of the most important sites in this unit. Multidisciplinary evidence of the range of depositional environments may be seen here; freshwater (plants, Cypridea, small Viviparus, Unio, fish etc.), brackish (non-Cypridea ostracods, Filosina etc.), brackishmarine (foraminifera, Cassiope etc.) are all present. The preservation of shell aragonite provides carbon isotope evidence to support environmental studies.	900m North east	No impact
Local Nature Reserves (LNR's)			
Warnham	The 17-acre Warnham Millpond with its reedbeds, islands and marginal vegetation dominates the reserve. Millpond Plantation and Walnut Tree Plantation are a mix of ancient woodland, conifer plantation and mixed broadleaved plantation. Boldings Brook runs through the middle of the reserve in a floodplain and floods the wet grassland and the willow carr in winter.	600m South	No impact

Due to the location, limited footprint of the development and lack of connectivity between the site and surrounding statutory protected sites, it is considered that none of the sites will be significantly impacted.

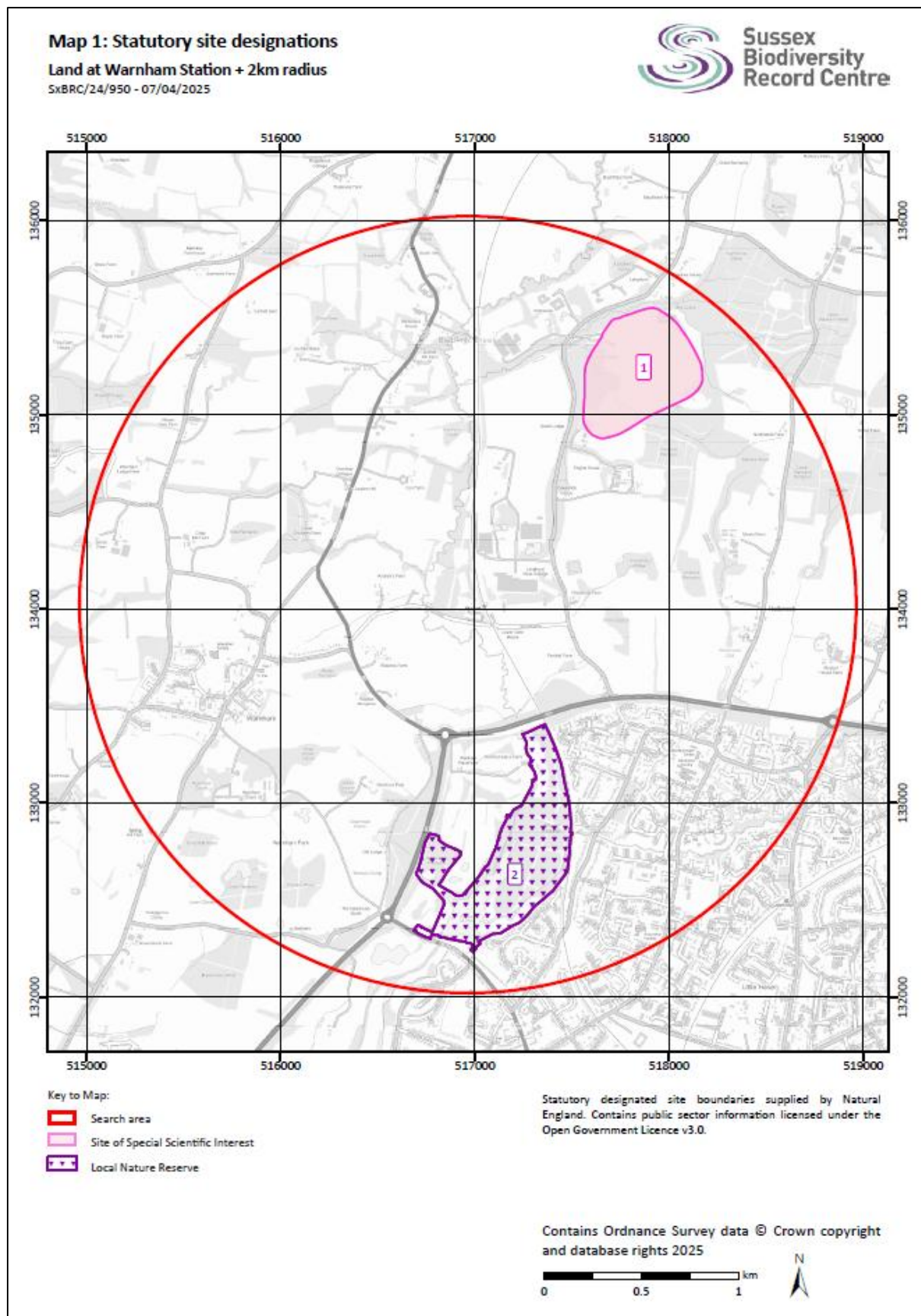


Figure 4. Location of site in relation to surrounding statutory protected sites

(© Sussex Biodiversity Record Centre).

5.1.2 Non-statutory sites

Two Local Wildlife Sites (LWS); 1 Local Geological Site and 1 Designated Road Verge were identified within 2km of the proposed development site. Due to the distance from the development these non-statutory sites are unlikely to be significantly impacted.

A summary of the sites is provided in table 12 below, with their location presented on the map in figure 5.

Table 12. Summary of Surrounding Local Wildlife Sites

Name	Features	Distance	Impact
Local Wildlife Sites			
Brookhurst Wood & Gill & Morris's Wood	Most of this woodland is situated on or adjacent to stream valley sides. It is dominated by Hornbeam, which has grown from coppice forming a dense canopy in many areas. The shrub layer is generally sparse but the ground flora is species-rich in places, particularly alongside the stream banks which also support a number of mosses and liverworts.	1km North east	No impact
Bendland Wood	Much of Benland Wood is ancient. Some is semi-natural woodland, and some has been re-planted with conifers. There are open glades and rides. A unique feature of this site is an area of chalk artificially created in Victorian times. This now supports an interesting calcicolous flora. There is a very rich butterfly fauna.	2km West	No impact
Warnham Mill Pond	Warnham Mill Pond Local Wildlife Site (LWS) is located on the edge of Horsham, and contains a diversity of semi-natural and NERC S41 habitats, including wetland, woodland and grassland. The site is also designated as a Local Nature Reserve. The LWS is dominated by the mill pond, a large body of open water that is fed by two watercourses, the Boldings Brook and the Channels Brook.	600m South	No impact
Local Geological Site			
Warnham Birck Pit	Large active clay pit exposing lower Weald Clay. One of the most important sites in the Weald Clay. Main pit about 350m long, 200m wide and 45m deep. The pit has been deepened since the previous visit on	900m North east	No impact

	29/08/2010 exposing considerable new section closer to the Horsham Stone.		
Designated Road Verge			
Unknown	No further information available.	1.9km North	No impact

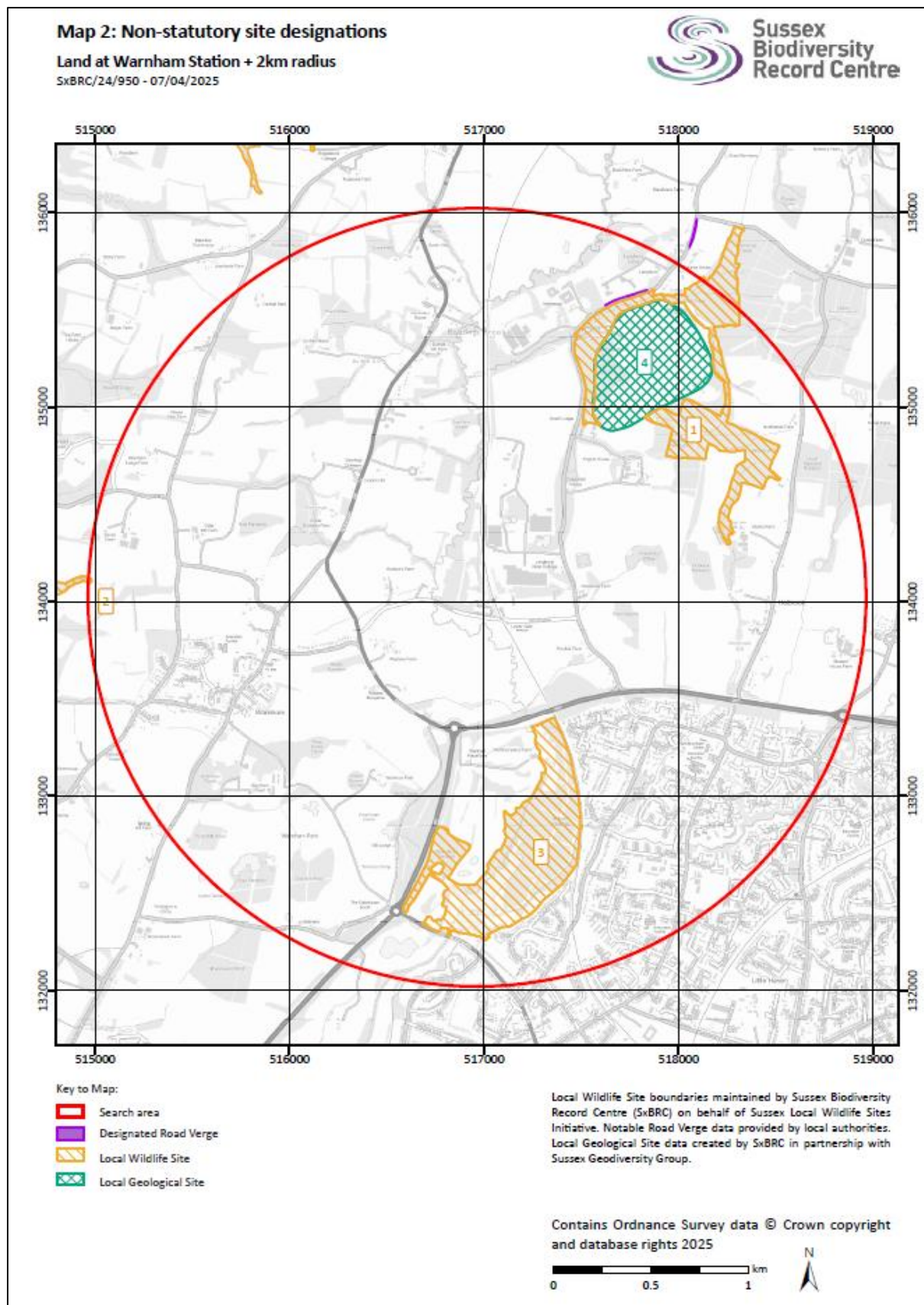


Figure 5. Map of Local wildlife sites located within a 2km radius of the proposed development.

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5.1.3 *Priority Habitats*

Adjacent to the north and west of the site is priority deciduous woodland habitat. Whilst no clearance of this habitat is proposed, there is the potential for impacts due to proximity of the development. Additionally, there are two areas of ancient woodland 200m north and east of the site. Within the wider landscape there are numerous areas of deciduous woodland, ancient woodland, Ghyll (wet) woodland, traditional orchards, open water and ancient or veteran trees. The location of nearby Priority Habitats shown on the map in figure 6.

Some minor impacts to the adjacent woodland may occur without suitable mitigation measures implemented both during and post development. The surrounding priority habitats are unlikely to be significantly impacted.

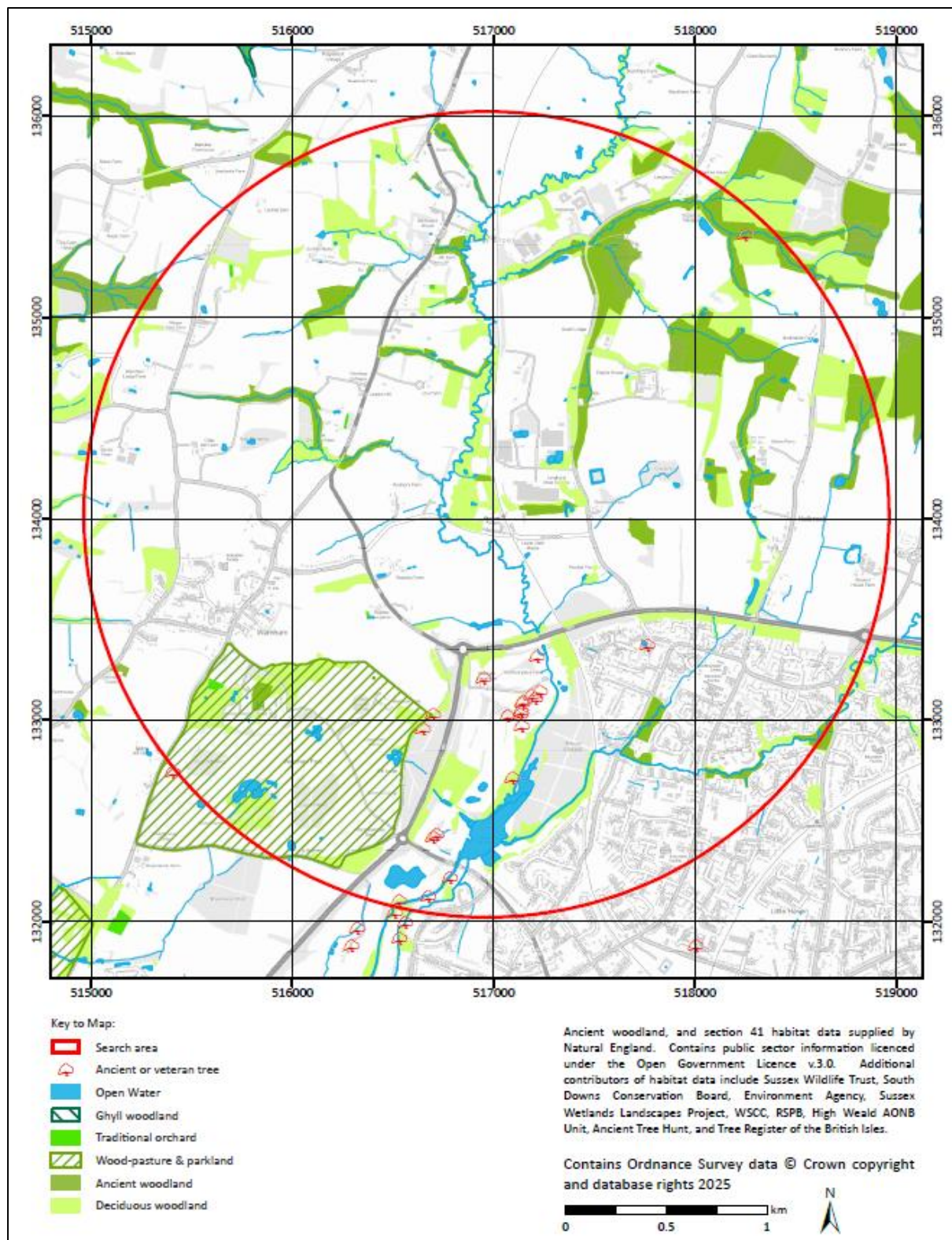


Figure 6. Map of Priority Habitat within 2km of the Proposed Development

(© Sussex Biodiversity Record Centre).

6 BASELINE SITE ASSESSMENT

6.1 On-site Habitats and Ecological Features

The site currently supports a small holding. It features buildings, areas of modified grassland, bare ground and individual trees. Lowland mixed deciduous woodland is present to the site peripheries. There are two ponds present on site, one on the northern boundary of the site, the other is a small pond for the fowl being reared on site. The characteristics and ecological value of each habitat is described Table 13 below. The extent and locations of these habitats and ecological features is also outlined on the phase 1 habitat map.

Table 13. Summary of habitats present on and adjacent to site.

Habitat	Description
Modified Grassland	This habitat formed one of the most extensive habitats on site. The majority of the sward length is less than 5cm. In the northern edges of the site, the grassland was more unmanaged and had a higher sward length of around 20cm. Species comprised predominantly of perennial ryegrass <i>Lolium perenne</i> , tufted hairgrass <i>Deschampsia cespitosa</i> and sedge <i>Carex sp.</i> Forb species comprised of white clover <i>Trifolium repens</i> , ribwort plantain <i>Plantago lanceolata</i> , dandelion <i>Taraxacum officinale</i> , daisy <i>Bellis perennis</i> , yarrow <i>Achillea millefolium</i> , garlic mustard <i>Alliaria petiolate</i> , field thistle <i>Cirsium discolor</i> , common hogweed <i>Heracleum sphondylium</i> , broadleaf plantain <i>Plantago major</i> , snowdrops <i>Galanthus nivalis</i> , dock <i>Rumex sp.</i> , lords and ladies <i>Arum maculatum</i> , creeping buttercup <i>Ranunculus repens</i> , forget-me-not <i>Myosotis sylvatica</i> , daffodil <i>Narcissus pseudonarcissus</i> , primrose <i>Primula vulgaris</i> and giant hogweed <i>Heracleum mantegazzianum</i> .
Bare Ground	Bare ground was present predominantly within the eastern and southern portion of the site. It is associated with areas where the fowl is being kept and vehicle tracks. The habitat supports minimal species, with some ruderal species present around the boundary of the eastern portion of bare ground. This was comprised of nettle <i>Urtica dioica</i> , cleavers <i>Galium aparine</i> , bramble <i>Rubus fruticosus</i> , rosebay willowherb <i>Chamaenerion angustifolium</i> and teasel <i>Dipsacus fullonum</i> .
Individual Trees	There are numerous trees scattered across the site, with groups of trees present within the southern boundaries of the site. There are two large oak trees within the north eastern corner of the site, both of which have Tree Protection Orders (TPOs). These trees and shrubs were comprised of Cypress <i>Cupressus sp.</i> , photinia <i>Photinia sp.</i> , beech <i>Fagus sylvatica</i> , cherry laurel <i>Prunus laurocerasus</i> , hawthorn <i>Crataegus monogyna</i> , ash <i>Fraxinus excelsior</i> , pine <i>Pinus sp.</i> , horse chestnut <i>Aesculus hippocastanum</i> , silver birch <i>Betula pendula</i> , Scots pine <i>Pinus sylvestris</i> , palm <i>Arecaceae sp.</i> , orange-ball-tree <i>Buddleja globosa</i> , blackthorn <i>Prunus spinosa</i> , oak <i>Quercus robur</i> , apple <i>Malus x domestica</i> , garden privet <i>Ligustrum ovalifolium</i> , holly <i>Ilex aquifolium</i> , elder <i>Sambucus nigra</i> and goat willow <i>Salix caprea</i> .
Priority Lowland Deciduous Woodland	To the north and western boundaries of the site is mature lowland mixed deciduous woodland. This habitat parcel connects to the nearby ancient woodland north of the site. Comprised predominantly of oak, with other species present such as silver

	birch, ash and horse chestnut. This has been identified as priority habitat on MAGIC.
Ponds	There are two ponds present within the red line boundary. One pond located to the south of the site is small and unvegetated, used for the fowl which are being kept on site. The other is on the northern boundary, with only a small section cutting within the development area. This pond is heavily shaded from surrounding vegetation and trees, as well as containing a large patch of algae. The only macrophyte noted within the pond is water mint <i>Mentha aquatica</i> .
Buildings	There are two buildings present on site, as well as some small agricultural related structures. The first building is an open barn structure, with corrugated iron panelling and roof, and an open section on the northern elevation. The second building is a single storey structure with timber cladding and corrugated iron roof. The other agricultural related buildings is a metal container, and a small chicken shed made from timber cladding and corrugated iron roof.

6.2 Off-site Habitat and Ecological Features

Directly adjacent to the north and west of the site is an area of deciduous woodland, which connects to a patch of ancient woodland, approximately 150m north of the site. Within this woodland are also around five waterbodies, as well as Boldings Brook. To the south and east of the site is Warnham station, residential buildings and a brickworks on the far side of the railway.



Figure 7. Phase One Habitat Survey Map

Table 14. List of Target Notes for Phase One Habitat Map

Target Note	Description
1	Snuffle Holes
2	Pond 2
3	Pond 3 & Giant Hogweed Location
4	Giant Hogweed Location
5	Refugia

6.3 Protected Species

6.3.1 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.3.2 Bats

Preliminary Roost Assessment

A total of two buildings are present on the site and each was assessed for its value to support roosting bats. The first building is an open barn structure, with corrugated iron panelling and roof, and an open section on the northern elevation. Due to the fabric buildup of the structure which will be subject to significant temperature variations, no suitable Potential Roosting Features (PRFs) were identified during the site visit.

The second building is a single storey structure with timber cladding and a corrugated iron roof. This building is in a slightly dilapidated condition, however due to the metal roof and some metal panelling present, no suitable PRFs were identified during the site visit.

The two large mature oak trees within the north east corner of the site have both been identified as having PRF-I bat roost potential. The northern tree had a crevice feature on the northern side which would be suitable for roosting

bats. The southern tree had numerous small cracks and crevices which could be utilised by individual roosting bats.

Suitable foraging and commuting habitat for bats is present on site, within the grassland habitats and along the edges of the adjacent woodland.

6.3.3 Birds

No nests were observed during the site visit. There is sub-optimal suitability for ground nesting birds within the site boundary as due to the large amounts of disturbance on site it is unlikely that any ground nesting birds would utilise the site. Suitable passerine habitat is present within the adjacent woodland and trees present on site. Any vegetation clearance should therefore be undertaken outside of breeding bird season.

6.3.4 Great Crested Newts

There are 13 waterbodies on and within 500m of the site, during the site visit only five were accessed and a HSI calculation was undertaken. Of these five, three were identified as having average suitability for GCN, the other two being below average and poor suitability for GCN.

Ponds 1 – 3 were subject to presence/absence surveys. Results are summarised in Table 15 below. Detailed results are presented in Appendix section 7.5.

Table 15. Summary of Pond Surveys

Pond Id	No. of Visits	GCN Present	Total Count (Peak)
1	6	Yes	11 (4) – 2 efts also included
2	6	Yes	18 (9)
3	6	Yes	6 (4)

As GCN are known to be present within these waterbodies, of which pond 1 is likely to be removed under the current proposed plans, a European Protected Species Licence (EPSL) or a District Level Licence should be obtained to move or mitigate impacts to the species present on or near to the site.

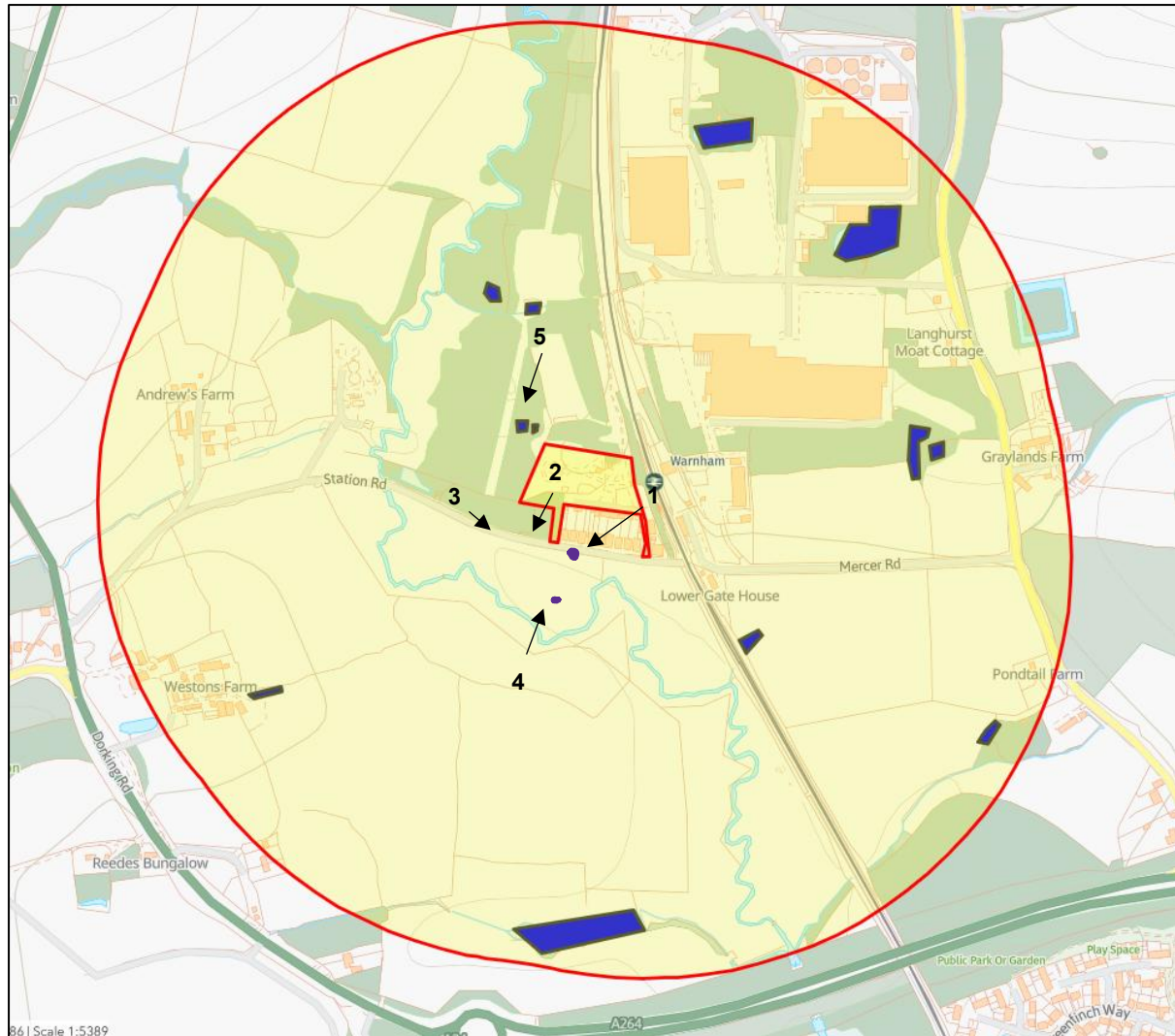


Figure 8. Map of Ponds within 500m of the proposed development

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6.3.5 Reptiles

Artificial refugia were placed in and around the proposed development area. The survey confirmed the presence of slow-worm *Anguis fragilis* within the survey areas.

Froglife (1999) basic means of evaluating reptile populations was used to predict 'low', 'good' or 'exceptional' populations based on the number of adult reptiles of each species recorded during a single survey visit.

	Low population Score 1	Good population Score 2	Exceptional population Score 3
Adder	<5	5 - 10	>10
Grass snake	<5	5 - 10	>10
Common lizard	<5	5 - 20	>20
Slow-worm	<5	5 - 20	>20

Maximum counts in any single visit for the surveys were slow worm (1). The presence of juveniles within the area suggests breeding population and that the maximum number of individuals is larger than that observed overall.

Based on the above findings it would suggest that population sizes within each of the development area is classified as low. Given that the survey focused only on the development area and based on the suitability of habitats within the wider area outside of these phases it is likely that the population across the adjacent habitats will be in the good category.

The reptile population on the adjacent habitats is likely to be of district level importance, however, due to only low populations being found within the development areas and noting that these will be functionally linked to wider populations, these areas specifically are assessed as being of parish level importance.

Table 16. Reptile Survey Summary Phase 2 Extraction Area

Date	Survey Number	Species		Notes
		Slow Worm <i>Anguis fragilis</i>	Great Crested Newt <i>Triturus cristatus</i>	
25/04/2025	Setup			
15/05/2025	1			
16/05/2025	2			
11/06/2025	3			
12/06/2025	4			
09/07/2025	5	1 x adult		Found at the northern portion of the site, near the large oak trees.
15/09/2025	6	1 x juvenile	1 x juvenile	Slow worm found within the southern portion. GCN found along the western boundary.
17/09/2025	7			

6.3.7 Hazel Dormice

There is limited suitability for hazel dormice within the proposed development area. The adjacent woodland to the north and west of the site may provide some suitable habitat for the species, however no hazel trees and no field signs were noted during the site visit. Only 3 records of dormice were obtained during the data search spanning from 1903 to 2023. Overall, it is considered unlikely that dormice will be significantly impacted by the proposed development.

6.3.9 Hedgehog

Suitable habitats for European hedgehogs and Common Toads are present on site and within the boundary habitats. Multiple records of hedgehog and common toad are present in the surrounding area. Contractors should be cautious when clearing the site and moving vehicles over the site and follow the recommended mitigation strategies. If a hedgehog or toad is identified care, should be taken to protect it from harm and an ecologist should be consulted.

6.4 Invasive Species

Giant hogweed *Heracleum mantegazzianum*. was found in the northern and western areas of the site, as well as adjacent to pond 3. This is a non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to allow this species to spread. Where the plants and surrounding soil are to be disturbed, it should be mechanically removed and either chipped or burnt on site or disposed of in licensed landfill as controlled waste.

Himalayan balsam *Impatiens glandulifera* was found within the woodland and grassland areas north of the site. This is a non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to allow this species to spread. Where the plants and surrounding soil are to be disturbed, it should be mechanically removed and either chipped or burnt on site or disposed of in licensed landfill as controlled waste.

6.5 Summary of Baseline Ecological Value

6.5.1 Habitats

The habitats on site have been assessed in regard to their context within the locality and the application site against a geographical evaluation exercise outlined within CIEEM guidance on impact assessments.

Table 17 below summarises the value assigned to the habitats present on site.

Table 17. Baseline habitat evaluation

Habitat	Summary	Evaluation
Modified Grassland	Unexceptional and common to local area	Site
Bare Ground	Moderate diversity across some patches of the margins. Unexceptional in context of the Parish	Local
Individual Trees	Unexceptional and common to local area.	Site
Priority Lowland Deciduous Woodland	Identified as priority habitat on MAGIC map.	County
Ponds	One pond on site contains Great Crested Newts in low numbers. Unexceptional in the context of the district.	Parish
Buildings	Unexceptional and common to local area.	Site

6.5.2 Species

The species/ species suitability on site has been assessed in regard to their context within the locality and the application site against a geographical evaluation exercise outlined within CIEEM guidance on impact assessments.

Table 18 below summarises the ecological value assigned to protected/ notable species on site.

Table 18. Baseline Species Evaluation

Species	Summary	Evaluation
[REDACTED]	[REDACTED].	Local
Bats	Some small numbers possible within the large individual trees on site. Good foraging and commuting habitat to the wider area.	Site
Birds	Small numbers of birds within the adjacent woodland and denser vegetation.	Site
GCN & Amphibians	Known GCN presence on site both within the pond and within the terrestrial habitats. Unexceptional in context of the county.	District
Reptiles	Suitable habitat and known presence of low numbers of reptiles on site.	Parish
Hazel Dormouse	Very limited to no habitat suitable on site for dormouse, adjacent habitats have some suitable habitat.	Site
Hedgehog	Woodland and dense vegetation creates opportunities for foraging and sheltering. Species widespread and common locally.	Local
Giant Hogweed & Himalayan Balsam	Schedule 9 Invasive Plant Species	Notifiable Species

7 IMPACT ASSESSMENT

7.1 Overview of Development

The proposals are for the development of multiple residential houses and flats with associated infrastructure and landscaping.

The proposals will involve the clearance of most of the habitats on site.

7.2 Potential Impacts

Potential impacts are characterised in terms of their direction, permanence, certainty, and reversibility. An assessment is also made of the likely significance of the impact prior to mitigation, and the significance of the residual impact, i.e., after all agreed mitigation is implemented.

The following assessment of potential impacts will consider only effects upon those features that have been identified as being of ecological significance.

Potential Construction and Occupational Impacts

- ❖ Direct Habitat Loss through land-take and development;
- ❖ Noise and visual disturbance; and
- ❖ Dust deposition.
- ❖ Increased light levels.

The following construction-related impacts have been investigated and scoped out as being unlikely to occur or be of significance given the existing conditions at the site provided that appropriate safeguards and working methods are adopted.

- ❖ Alterations to surface water flow and quality;
- ❖ Alterations to ground water;
- ❖ Pollution.

Upon review of the proposed plans the following habitats/species of ecological significance have been identified as being likely to be impacted by the proposals:

Table 19. Impact Assessment

Habitat/ Species	Impacts	Biodiversity Value	Magnitude in the absence of mitigation	Significance
Modified Grassland	The proposals will result in the clearance of all the grassland on site.	Site	High Negative Impact	Minor

Bare Ground	The proposals will result in the clearance of all the bare ground on site	Local	Medium Negative Impact	Minor
Individual Trees	Removal of a majority of the individual trees onsite, with a line of trees retained within the eastern boundary.	Site	Medium Negative Impact	Negligible
Priority Lowland Deciduous Woodland	To be retained.	County	Negligible	Negligible
Ponds	GCN pond to be retained. Small duck pond to be removed.	Parish	Medium Negative Impact	Minor
Buildings	To be removed	Site	High Negative Impact	Negligible
Badger	Loss of some foraging habitat. Entrapment of animals in open excavations. Potential disturbance/ destruction of setts if established within the interim period between construction and planning.	Local	High Negative Impact	Minor
Bats Roosts in Trees	Indirect impacts to potential roosts in retained trees.	Site	Low Negative Impact	Negligible
Bats: Foraging and Commuting	Loss of foraging habitat through direct habitat clearance. Increased light spill on woodland habitats may alter foraging and commuting behaviour.	Site	High Negative Impact	Minor
Birds	Destruction of active nest sites. Displacement of breeding territories. Loss of suitable nesting habitat through tree/vegetation clearance works.	Site	High Negative Impact	Minor
GCN & Amphibians	Loss of optimal habitat within roaming range from known breeding ponds. Killing/injuring individuals.	District	High Negative Impact	Moderate

Reptiles	Loss of habitats suitable to support reptiles with confirmed presence. Loss of habitats within these areas represents the removal of foraging, refuge, basking and possible breeding and hibernation sites. Killing/injuring individuals	Parish	High Negative Impact	Minor
Hazel Dormouse	Encroachment into adjacent suitable habitats.	Site	High Negative Impact	Minor
Hedgehog	Loss of some foraging and hibernation habitat. Direct killing and injury through habitat clearance works.	Local	High Negative Impact	Minor
Giant Hogweed & Himalayan Balsam	Potential spread of a Schedule 9 Invasive Plant Species through clearance and ground works.	Notifiable Species	High Negative Impact	N/A

7.3 Cumulative Impacts

It is understood that there are no other significant developments within the local area at this time.

The mitigation and impact avoidance measures proposed should be secured using planning condition or obligation. If these measures are implemented successfully there will be no significant adverse effects that could combine with effects from other consented developments to create significant cumulative effects.

The cumulative effects of this development can therefore be considered to be minor negative at worst.

8 MITIGATION

8.1 Overview

This section of the EclA considers appropriate mitigation measures which are required to avoid or reduce impacts on the identified valued ecological receptors. Recommendations for mitigation have been based upon industry guidance and consideration of likely effectiveness, practicality, whilst not significantly affecting the feasibility of the proposals.

Table 20. Mitigation Measures

Habitat/ Species	Significance of Impact prior to mitigation	Mitigation	Residual Magnitude of Impact	Residual Significance of impact
Modified Grassland	Minor	Appropriate landscaping scheme to enhance floral diversity and existing foraging resource for birds, bats and invertebrates.	Negligible	Negligible
Bare Ground	Minor	Appropriate landscaping scheme to enhance floral diversity and existing foraging resource for birds, bats and invertebrates.	Negligible	Negligible
Individual Trees	Negligible	Arboricultural methods to be adopted to avoid and minimise damage to root protection areas of the retained tree. See AMS documentation. Arboricultural protection to avoid and minimise impacts to retained trees.	Negligible	Negligible
Priority Lowland Deciduous Woodland	Negligible	Areas of Ancient woodland to be protected by implementation of a 15m buffer zone. See section 8.2.10 Pollution, prevention and control measures, particularly in regard to dust deposition and surface water run-off to be implemented to avoid degradation of retained habitat. See section 8.2.6	Negligible	Negligible
Ponds	Minor	Appropriate landscaping scheme to enhance floral diversity and existing foraging resource for birds, bats and invertebrates. The retained pond could be enhanced to further add biodiversity value to the development.	Negligible	Negligible
Buildings	Negligible	N/A	Negligible	Negligible

	Minor	                	Negligible	Negligible
Bats Roosts in Trees	Negligible	The provision of external bat roosts within the retained trees/hedgerows has the potential to increase the number of bats within the local environment together with the proposed habitats post development. See section 8.2.9	Low Negative/ Negligible	Negligible
Bats: Foraging and Commuting	Minor	Low level Lighting Strategy to be adopted throughout the development. See section 8.2.1. The landscaping scheme should seek to remain mature trees along the site boundaries. Trees identified for retention should be protected from damage throughout construction through arboricultural methodology and protection. These trees should be protected in the long term through restrictive titles on properties. The additional floristic species within the gardens and soft landscaping of the development would increase the insect population within the site and as a result the bat prey species. The provision of integrated bat roosts within the new structures has the potential to increase the number of bats within the local environment	Low Negative	Negligible/ Minor

		together with the proposed soft landscaping of the development, of greater value than the existing arable usage.		
Birds	Minor	Vegetation clearance works should be undertaken outside of the nesting bird season (March – August inclusive) or following a nesting bird check by suitably qualified ecologist. Establishment of soft landscaping in the longer term will offset and enhance opportunities for nesting and foraging from the existing. The provision of integrated bird nesting boxes within and to the new structures has the potential to maintain the number of birds within the local environment together with proposed landscaping and habitats on site. See section 8.2.2	Low Negative	Negligible/ Minor
GCN	Moderate	A District Level Licence is to be obtained for the vegetation clearance as it will result in the destruction of GCN habitat and has the potential to kill/injure/disturb GCN. Site clearance should be done so sensitively using Reasonable Avoidance Measures. See section 8.2.3.	Low Negative	Negligible
Reptiles	Minor	Reptile mitigation strategy to be implemented to include exclusion fencing, translocation, destructive search methodology enhancement of adjacent habitats and receptor sites. See section 8.2.9.	Low Negative	Negligible
Hazel Dormouse	Minor	Sensitive clearance of suitable habitats. See section 8.2.5	Negligible	Negligible
Hedgehog	Minor	Sensitive clearance of suitable habitats. See section 8.2.4. Created habitats within development area has the potential to provide additional feeding resources and nesting habitat within the site for this mammal species.	Low Negative/ Negligible	Negligible
Giant Hogweed & Himalayan Balsam	N/A	Method Statement in regard to proposed woodland clearance works and proximity to invasive plant species. See section 8.2.7 & 8.2.8.	Negligible	Negligible

8.2 Detailed Mitigation Measures

Table 21. General Mitigation Measures

Works	Methods	Timing	Responsibility
Appointment of an Ecological Clerk of Works or Environmental Champion	An Ecological Clerk of Works (ECoW) and Environmental Champion (EC) will be responsible for monitoring and conformance to this CEMP and any other relevant environmental documents (e.g. EPSL Licenses). The role of the EC can be fulfilled by an experienced member of the principal contractor's team with a daily site presence	Appointment prior to any works	Project Manager/ Principal Contractor
Toolbox Talks	Toolbox talks will be provided to all contractors to explain ecological sensitivities on site. The talk will also include reference to appropriate working methods as detailed within this document. Toolbox talks will be updated as required where any new ecological issues arise (including seasonal variations/restrictions), at the start of each construction phase or if changes to working methods are required. Toolbox talks regarding ecological constraints will be provided to all new contractors by the Principal Contractor and/or the EC, or the ECoW where appropriate, such as at the start of each relevant phase.	Prior to any work commencing and throughout construction	Principal Contractor and/or EC/ ECoW
Contractor Risk Assessment and Method Statements	This document should be provided to all contractors alongside the construction phase plan prior to them accessing the site to inform their Precautionary Working Method Statement (PWMS) for all items of works they will be undertaking. Any works carried out by contractors should be accompanied by a PWMS. All PWMS should take into consideration and include awareness of the measures set out in this document where appropriate and shall include biosecurity measures to be observed for the duration of the works. All PWMS should be signed off by the Principal Contractor, with support from the ECoW where required, prior to commencement of works.	Prior to any work commencing and throughout construction	Principal Contractor/ ECoW/ Subcontractors

Signage	Signage will be installed in appropriate locations along protective fencing to inform all on site operatives and contractors of the ecologically sensitive zones present on the site. Signage will be checked on a weekly basis throughout the construction phase(s) by the appointed EC to ensure legibility at all times. Any defective signage should be replaced as soon as practicably possible.	Throughout construction	Principal Contractor and/or EC
Pollution Incidents	Preventative measures will be implemented throughout the works to avoid pollution incidents which may indirectly affect terrestrial habitats on site, and aquatic habitats off-site. See section 8.2.6 and the Pollution Prevention Guidelines for further information.	Throughout construction	Principal Contractor and/or EC/ Subcontractors
Noise Pollution	There should be no planned construction work outside of core working hours (07:00-18:00 Monday to Friday). Work outside of these hours may be required under exceptional circumstances or for health and safety requirements. Any work outside of these hours will need to be considered by the Principal Contractor and/or the Project Manager where approval may need to be sought from the Local Planning Authority (LPA) under Section 61 of the Control of Pollution Act 1974.	Throughout construction	Principal Contractor/ Project Manager/ ECoW/ Subcontractors
Dust Pollution	Dust and air pollution can cause environmental impacts to wildlife and consideration shall be made to construction activities when working in proximity of Habitats of Principal Importance and other retained habitat on site. During excessive periods of dry weather, access roads and compound areas shall be regularly dampened down to prevent dust. Monitoring will be carried out by the Principal Contractor on a weekly basis and recorded.	Throughout construction	Principal Contractor and/or EC/ Subcontractors
Construction Traffic	Appropriate speed limits will be enforced, and signage installed throughout the site to mitigate any collisions during construction with protected wildlife.	Throughout construction	Principal Contractor and/or EC
Material Storage	Materials should ideally be stored in secure compound but where this is not possible, materials such as pipes will require capping or storing vertically to prevent entrapment.	Daily throughout construction	Principal Contractor and/or EC

	The EC will carry out checks at the end of each working day to ensure materials are stored correctly.		
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8.2.1 Lighting Strategy

A sensitive lighting scheme should be implemented during and after construction to avoid indirect disturbance to foraging and commuting bats, birds and mammals that may be using the peripheries of the site, and should include the following elements:

- ❖ Lighting around the proposed site access should comply with the latest guidelines <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>.
- ❖ Sensitive positioning of lighting to avoid unnecessary spill onto the retained woodland habitats, as well as any habitat enhancement features to be incorporated into the development (see below);
- ❖ Angle of lighting: avoidance of direct lighting and light spill onto areas of habitat that are of importance as commuting pathways and/or foraging areas;
- ❖ Type of lighting: studies have shown that light sources emitting higher amounts of UV light have a greater impact to wildlife. Use of narrow-spectrum bulbs that avoid white and blue wavelengths are likely to reduce the number of species impacted by the lighting;
- ❖ Reduce the height of lighting columns to avoid unnecessary light spill.
- ❖ Use of cowls, baffles, louvres to minimise back spill:
- ❖ Additional screening planting to be undertaken at woodland edge using native species such as holly and beech.

8.2.2 Breeding Bird Mitigation

Demolition works, tree felling, and habitat clearance should take place between September and February, inclusive, to avoid harm to nesting birds. If this is not possible a nesting bird check should be carried out by an appropriately experienced ecologist.

Works within nesting season:

Prior to vegetation clearance proposed on site

- ❖ Where works are to be carried out within the breeding bird season (March – August inclusive), a competent ecologist should undertake a nesting bird survey to check for any active birds' nests.
- ❖ The nesting bird check should be carried out a maximum of 24 hours prior to works commencing. Should there be a delay to works commencing of more than five days, a further nesting bird check will be required to ensure that nests have not been established in the interim.
- ❖ Ecologist to give a 'Toolbox Talk' to contractors before works commence, including briefing on any features within the site that are sensitive with respect to nesting birds. During the toolbox talk the Ecologist will recommend any adjustments to their working methods to minimise or avoid impacts on nesting birds.
- ❖ If an active nest is discovered, it must be left in-situ and an appropriate buffer area surrounding must be implemented. No works likely to disturb or damage the nest may occur within the designated area until the end of the breeding bird season or the nest can be confirmed as no longer active. The Ecologist will confirm that any nest identified is inactive before works progress into that area.

Ongoing

- ❖ Contractors to remain vigilant to the presence of nesting birds on site, noting that nests can sometimes be established throughout the construction period. In the event an active nest is discovered during the works, the contractor should inform the appointed ecologist for advice.

Compensation

In order to minimise the impacts of the development on local populations of breeding birds, the following measures would be proposed:

- ❖ Sparrow boxes to be installed within the new residential dwellings. It is suggested that at least 10% of the new dwellings should have such a feature installed.
- ❖ Areas of grassland and soft landscaping to be created and enhanced where possible to increase nesting opportunities and invertebrate numbers and foraging for a range of bird species.
- ❖ Boundaries will be planted with native tree and shrub species to provide additional nesting and foraging habitats.
- ❖ High intensity lighting will be avoided wherever possible and light spillage into adjacent mitigation areas will be minimised

8.2.3 Reasonable Avoidance Measures (Herpetofauna)

Reasonable Avoidance Measures (RAMs) should be adopted to avoid significantly impacting amphibians and reptiles in the event they are present on site. This precautionary approach should involve works being timed to occur between March – October when amphibians are active above ground and are able to readily disperse, should they be disturbed.

- ❖ Ground clearance works should be preceded by habitat manipulation and vegetation management to encourage dispersal. The height of the existing vegetation should be reduced in stages to a point where the habitat becomes unsuitable for reptiles and common amphibians.
- ❖ Clearance should be carried out in a directional manner encouraging any animals to disperse into suitable adjacent habitats.
- ❖ Following initial vegetation management, subsequent clearance works should be carried out following a destructive search methodology. This involves suitable sheltering features such as log and brash piles being searched by hand prior to removal and the initial soil layer being scraped away using an excavator with a ditching bucket attached.
- ❖ Where deemed necessary an ecologist should be present to oversee these works and carry out a careful inspection to check for any reptiles or amphibians present.
- ❖ In the event of any common species of amphibian or reptile being found in small numbers, they will be caught by the on-site ecologist and moved to a safe area away from the works; however, if large numbers of amphibians or any GCN are encountered, it will be necessary to stop work and contact the County Ecologist and/or Natural England to agree appropriate action.
- ❖ Any materials to be stored on site that could act as temporary resting places should be raised off the ground, on pallets or something similar.

- ❖ Finalised details of the working methodology could be provided in a Construction Ecological Management Plan (CEMP), which would be outlined to contractors on site as a toolbox talk, prior to any clearance works commencing.

8.2.4 Hedgehog

Site clearance should be carried out in a precautionary manner in relation to hedgehogs. Any hedgehogs encountered during the works allowed to move off of their own accord. If this is not feasible, they should be carefully moved to a safe location by gloved hand. If clearance works are being carried out during hedgehog hibernation season (defined as November to March), any structures suitable for hedgehog hibernation such as vegetation piles should be checked for hibernating hedgehogs. If a hibernating hedgehog is present, a suitable exclusion zone should be put around the hedgehog, with no works occurring in this area until the hedgehog has moved off of its own accord. If this is not feasible, the hedgehog will be carefully translocated to suitable off-site habitat by a suitably qualified ecologist under appropriate weather conditions. New nesting material and supplementary food safe for hedgehog consumption will be provided at the translocation site.

To maintain connectivity within the completed development, mammal movement (specifically hedgehog) should be considered during development design. Small gaps in boundary fences (~13cm x 13cm) should be included to allow the movement of urban wildlife through the built environment.

8.2.5 Hazel Dormouse

Trees and shrubs within the area to be removed should be cut down between November and March inclusive, to avoid both the bird nesting season and the majority of the period when dormice might be found in nests above ground. Clearance should be done by hand and in a sensitive manner, to minimise the likelihood of disturbing or killing hibernating dormice. Similarly, the process of removing the cut material should, as far as possible, be designed to protect dormice hibernating on the ground.

This can involve such techniques as:

- sacrificing a single 'haulroute', which has first been cleared by hand if necessary;
- using a long-reach mechanical grab and/or limiting the number of 'drag-lines' along which stems are removed; and/or
- directional felling to minimise the ground impact.

In some cases it is possible to leave felled stems until later in the year (brash should however be removed or chipped to avoid subsequent constraints associated with nesting birds). There will always be some parts of the site where hibernating dormice will be more at risk. In these situations, careful raking over of leaf litter and moss on the ground and the hand-clearance of log piles may help to find a few hibernating dormice before the machines move in. However, searching large areas is impractical.

If at any time hazel dormice are found during the works, the works will stop, and further advice sought with a suitably qualified ecologist.

8.2.6 Pollution, prevention and control measures

Preventative measures will be implemented throughout the works to avoid pollution incidents which may impact upon the adjacent habitats, which are of ecological importance. These will be provided in detail within the CMP and best practice for construction.

General measures are provided below, with specific pollutants detailed within subsequent sections:

- ❖ Spill kits to be always kept on site in the event of a leak or spill. Sand, earth, or commercial products that are approved for your stored materials, close to the storage area. All site staff to be trained on correct usage.
- ❖ All hazardous materials will be stored away from watercourses, and stored off the ground in fenced off and secure areas.
- ❖ All powered equipment operated within 15m of water will use biodegradable chain oil. Should any incidents of pollution occur the Principal Contractor will be informed with appropriate rectification measures implemented as soon as practicably possible.
- ❖ Where applicable refuelling of machinery will take place in appropriate and suitably bunded designated areas away from the areas of retained habitat and watercourse by a minimum distance of 15m. Plant nappies and or a drip trays to be used under any idle or stored plant.
- ❖ Machinery utilising internal combustion engines should not be left unattended when running.
- ❖ For further information please see the Pollution Prevention Guidelines (PPGs).

Dust

Dust and air pollution can cause environmental impacts to wildlife and consideration shall be made to construction activities when working in proximity to the adjacent woodland areas.

During excessive periods of dry weather, access roads and compound areas shall be regularly dampened down to prevent dust. Monitoring will be carried out by the Principal Contractor on a weekly basis and recorded.

Incident Reporting

There is a requirement to report any incidents that have had or that could have had an environmental impact. The Environment Agency hotline number can be used 0800 80 70 60 to report all incidents.

Incidents include spillages (oils and chemicals), contaminated run-off, flooding, riverbed disturbance, damage to underground services, damage to habitats, poor waste disposal and storage. If in doubt report it.

An Incident Response Plan should be produced by the Principal Contractor as part of the environmental impact management of their work.

This should include the following:

- ❖ list of key external and internal contacts
- ❖ reporting procedures
- ❖ site plan including drainage and location of storage/refuelling areas.
- ❖ list of stored materials
- ❖ details of local environmental sensitivities, e.g. abstractors, high amenity areas and fish farms
- ❖ location of spill equipment
- ❖ procedures for spill containment and remediation

All staff and contractors should be trained and competent in the use of spill equipment and how to manage and dispose of waste materials legally.

Where oil and chemicals are to be used in close proximity to a watercourse, store a suitable spill kit or absorbent materials nearby. Provide appropriate bunded temporary storage for any oils and chemicals. Contain all spillages using absorbents such as sand, soil or commercially available booms or pads and notify us immediately, using the emergency hotline number.

8.2.7 Himalayan Balsam Treatment and Control

Any waste containing Himalayan balsam is classed as controlled waste under the Environmental Protection (Duty of Care) Regulations 1991, which requires all producers, carriers and disposers of waste to follow a code of practice and keep records.

Under provisions made within the Wildlife and Countryside Act 1981, it is an offence to spread Himalayan balsam. Liability may also extend in situations where a landowner has knowingly permitted the spread of this invasive species onto neighbouring land.

Failure to manage and dispose of this species in accordance with current guidelines and legislation can lead to prosecution.

Himalayan Balsam was introduced into Britain in 1839 as an ornamental garden plant. The species has escaped from residential and managed settings, and now has quickly colonised large areas of river banks, areas of damp ground and waste land (sometimes brownfield sites). Himalayan Balsam is an annual plant which can grow to a height of 2 metres, and is identified by its purple-pink slipper shaped flowers, which are present between June and August. When seed pods have developed, they explode when touched, and quickly disperse very large quantities of seed across large areas – seed dispersal is even more successful and widespread when near to a watercourse. Any control measures conducted after seed pods have formed will be ineffective and have no long-term benefit.

Himalayan Balsam can grow and expand rapidly, and forms dense stands which out-compete and choke populations of native grasses and ruderal plant species. As Himalayan Balsam is an annual plant, river banks can often be left bare of vegetation during the autumn and winter when the plant dies back; this leaves banks susceptible to erosion. Himalayan Balsam is therefore severely damaging to native plant populations, habitats and ecosystems, as well a risk factor contributing to soil erosion and complications of erosion into watercourses. Seedbank of this species lasts between 18 to 24 months; a monitoring period of at least 2 years should be applied post-treatment, with any new shoots hand-pulled if caught in time. This treatment strategy has been adapted from information supplied by the Centre for Ecology & Hydrology and the Royal Horticultural Society.

Mechanical control

Himalayan Balsam is easy to cut by hand or by mechanical means, and is also relatively simple to regulate by mechanical control methods. However, Himalayan Balsam usually grows amongst bushes and bramble growths, or on unsteady ground of a river bank – this makes the plant often difficult to access for cutting, and means that parts of an infestation are likely to be missed.

Himalayan Balsam must be cut from the lowest node, very close to the soil level. A failure to cut the plant low enough will result in regrowth and re-flowering later in the season. Himalayan Balsam may be mowed regularly in order to aid control of the plant, however mowing may miss the lowest node of the plant, and can be difficult in areas where the plant is growing in challenging areas. Mechanical control must be completed prior to seed pods have been formed, otherwise cutting or mowing may spread the species more, and make the infestation more

severe. Very small infestations (i.e. small individual plants, group of small, young plants) can be controlled by hand-pulling, as the plant is shallow-rooted.

Chemical control

Herbicide control is the recommended manner of treating infestations of Himalayan Balsam. Two herbicides can be used to control infestations of Himalayan Balsam: glyphosate and 2,4-D amine. Plants should be treated with herbicide in the spring, before flowering has occurred. Glyphosate can be sprayed over large areas of foliage if a large infestation is located, or can be used in a weed wiper for smaller infestations or on individual plants. The latter has the advantage of preserving native flora around the Himalayan Balsam, which would otherwise be killed by glyphosate.

The herbicide 2,4-D amine is advantageous when Himalayan Balsam is growing on a river bank; this herbicide controls many broad-leaved annual weeds, but does not kill grasses. Where Himalayan Balsam has not completely choked grasses from river banks, 2,4-D amine can be used to control Himalayan Balsam whilst preserving grasses, in order to reduce the risk of soil erosion; this will also encourage grasses to re-establish across the bank at a faster rate. A long-lance sprayer is recommended when Himalayan Balsam is growing on river banks which are of a challenging terrain.

Upon completion of chemical control by either herbicide, the infested area should be monitored for at least 2 years. New seedlings can be hand-pulled, providing that no plant matter is left behind.

Biological and environmental control

No biological control agents of Himalayan Balsam have been identified. However, regular grazing of previously infested areas by cattle and sheep are likely to prevent recolonisation of the species due to grazing of young seedlings and poaching of the ground. No environmental control methods are known for Himalayan Balsam. However, a re-establishment and maintenance of a dense grass sward can prevent a large outbreak of Himalayan Balsam (but would be susceptible to being outcompeted by the species if it manages to re-establish).

8.2.8 Giant Hogweed Treatment and Control

Giant hogweed (*Heracleum mantegazzianum*) is a large, invasive plant species that is native to the Caucasus region of central Asia. It was introduced to Europe and North America as an ornamental garden plant in the 19th century and has since become naturalized in many areas.

Giant hogweed is so-called because of its large size - it can grow up to 5 metres tall - and its distinctive appearance. The plant has thick, hollow stems that are covered in coarse, bristly hairs, and its leaves can be up to 1.5 metres wide. It produces large clusters of white flowers that can measure up to 50cm across.

While giant hogweed might look impressive, it is also highly invasive and potentially dangerous. The plant contains a sap that can cause severe skin irritation when it comes into contact with human skin, leading to painful burns, blisters and scarring. The sap contains furanocoumarins which can cause a photosensitive reaction in the skin – in some cases this is severe and can lead to long-term skin damage, including hyperpigmentation and hypersensitivity to sunlight.

Chemical Control

Spraying with an appropriate herbicide is the most effective treatment option available, although it can take several years to eradicate the species completely. The soil beneath an established stand of Giant Hogweed will contain a

large number of seeds that will continue to produce new plants. Herbicides can be used to achieve short-term control of the plant.

The only herbicide known to control Giant Hogweed and with the necessary approval for use in or near water is glyphosate. Glyphosate is sold under a number of brand names. The plants can be sprayed with glyphosate when growing actively but still less than about 1 m high (usually in April and May). In order to be effective, spraying must be carried out before the plant flowers and sets seed, otherwise there will be thousands of additional seeds on the ground ready to grow at some point in the future. As Giant Hogweed seeds can remain in the soil for several years, a long-term strategy involving treatment with herbicide will be required.

It is essential that any herbicide treatment is carried out by an experienced, competent and qualified operator, complying with any approval advice provided by the relevant licensing authority and all health and safety considerations. Efforts should be made to minimise damage to non target species.

Mechanical Control

Hand cutting of Giant Hogweed should never be undertaken unless the operator is wearing full protective clothing to prevent skin contamination by the sap. Machine operators should take similar precautions as the sap can be spread onto machinery and subsequently come into contact with skin. Cut material can remain active for many hours. Cutting before flowering will, at best, produce only temporary control as the plant can regrow the following season. Cutting after flowering has no benefit once the seeds have been formed, except to clear away the dying vegetation. Seed heads should be bagged before cutting to reduce dispersal during control.

Small infestations can be controlled by digging out the whole plant. This should be done in April or May, cutting the plant at a 45 degree angle below ground to ensure damage to the rootstock and to prevent regrowth from the base.

8.2.8 Bat Compensation measures

Integrated Bat Boxes

Integrated bat boxes should be installed across the proposed dwellings. Suitable boxes include the Habibat 001 integrated bat boxes or a suitable equivalent. Boxes are best installed at eaves height avoiding close proximity to window openings. Installing boxes on a variety of building elevations will provide a range of environmental conditions for bats to roost in post-development. At least 25% of the proposed dwellings should have an integrated bat box installed.

Tree Mounted Bat Boxes

Three concrete-type bat boxes installed to retained trees within the adjacent woodland. Habibat 017 or a suitable equivalent recommended.

Bat box types to include:

5 suitable for breeding – Improved Maternity Roost Bat Box

<https://www.nhbs.com/search?q=maternity+bat+box&qview=176916> or suitable equivalent,

5 suitable for hibernation use by small numbers of bats - Large Multi Chamber WoodStone Bat Box

<https://www.nhbs.com/large-multi-chamber-woodstone-bat-box?bkfno=246918> or suitable equivalent,

5 General purpose boxes - Improved crevice bat box <https://www.nhbs.com/improved-crevice-bat-box?bkfno=187782> or suitable equivalent.

The aim of these boxes is to create suitable roosting opportunities in the extraction period, with the longer term objectives of enhancing the bat value of the local area, rather than provide sufficient mitigation for the loss of the hedgerows on site. This will be mitigated through the creation of new foraging habitat post restoration.

8.2.9 Reptile Mitigation Strategy

Enhancement of retained/ adjacent habitat and Receptor sites

The reptile receptor area's (See figure 15) will be enhanced prior to translocation works, with the following measures:

- ❖ Two log piles should be constructed within the receptor area. These should consist of deciduous logs piled to c. 1m in height. Pieces of turf should be placed over the top of the log pile to create a microclimate suitable for hibernating;
- ❖ The grassland within the receptor site should not be cut between mid-March and mid-October because of the risk of killing and injuring animals. Instead it should only be 'topped' outside of the main period of reptile activity. Grassland areas should be topped to a height of 15-20cm, allowing a tussocky structure to develop and be maintained;
- ❖ The grassland should be topped on a three-year rotation, with only 30% of the total grassland area being topped in any one year. Longer areas of grassland should be retained adjacent to bramble patches and hedgerows;
- ❖ Bramble scrub within the receptor site should be cut on rotation once every 2 years, such that only 50% of the total scrub area is cut in any one year. Scrub should be cut to a height of 50cm between October - February (inclusive); and,
- ❖ Any vegetation clippings should be piled in a sunny location within the reptile receptor area to create a compost heap that will serve as an additional hibernaculum and a potential egg laying site for grass snake. Vegetation should be piled adjacent to the treeline boundary.

Site preparation/ Passive Dispersal

Vegetation within the proposed works area will initially be strimmed down to a minimum height of 150mm using handheld equipment (such as strimmers and chainsaws) under the supervision of a suitably experienced ecologist. This will make it easier to catch the reptiles during the translocation and encourage them to use the refuges. Clearance works of above ground vegetation should be timed to occur outside of the bird-breeding season.

Then (at least 48hrs later) the vegetation will be cut again, this time down to ground level.

All arisings from the vegetation clearance will be removed from the site immediately and not left lying around in the form of brash piles, mulch heaps etc., in order to avoid creating habitat piles that would otherwise reduce the effectiveness of the trapping exercise.

The two-stage cut is appropriate within the active reptile period (considered approximately April to September), however a modified one-stage cut to just above ground level (retaining leaf litter and roots until after the temperatures have warmed up in April) is possible in the Winter period.

Clearance works should be done in a directional manner, encouraging reptiles to disperse into retained/enhanced habitats to the boundary of the proposed works area.

Exclusion Fencing

Several designs of reptile exclusion fencing are available varying from temporary (polythene or geo-textile) to semi-permanent (polypropylene panels). Semi-permanent fencing is recommended in this instance given the duration of the works, it is both more robust (and therefore requires less repair inputs during works) and panels used can be re-used or recycled. Caudon® Semi-permanent Snake Fencing or a suitable equivalent is recommended. The reptile exclusion fencing should be installed to the edge of the buffer from the woodland areas.

All fencing utilised should comply with the following key points:

- ❖ Fencing should consist of polypropylene panels, plastic or geotextile sheeting supported by timber stakes;
- ❖ The fence should be buried to depth of approximately 250mm within a shallow trench created using a chain trencher, mini-digger or by hand;
- ❖ The above ground vertical section of the fence should be at least 600mm in height (excluding top fold);
- ❖ A top fold of at least 100mm is required for perimeter fencing only (no top fold required for internal drift fencing). In all areas the top fold must face away from the area that reptile are being excluded from (i.e. towards the outside of the site into areas where reptiles are still able to access);
- ❖ Attachment of panels to the wooden stakes will depend on the form of fencing utilised. In all cases manufacturers guidance should be followed with regard to the method and frequency of attachment required.

Reptile trapping

Reptile trapping will be undertaken between mid-March – mid-October inclusive to avoid periods of hibernation. High temperatures across peak summer should also be avoided, where conditions are likely to place undue stress on animals being translocated. As such the exact start date of trapping works will be dependent on weather conditions.

Reptile trapping will consist of a suitably qualified ecologist checking each of the refugia twice daily, both in the morning and afternoon. Any reptiles encountered during the visits will be captured and their species, life stage and sex recorded. The reptiles will be placed and transported in a cloth sack, (to avoid causing injury during the transfer), and released within areas of the receptor site which provide suitable cover.

Checks are scheduled to continue until a total of 60 checks have been conducted under suitable conditions (defined as temperature of between 10-18°C and avoiding strong winds and heavy rain). However, if following completion of a minimum of 30 valid checks a period of five consecutive days (as opposed to checks) of no capture (under valid conditions) occurs then this will be taken as an indication that reptiles numbers at the site have dropped to a level low enough to commence the destructive clearance process.

All reptile trapping works will be conducted by a suitably qualified ecologist.

The proposed trapping duration will be extended if high numbers of reptiles are still being captured at the end of the proposed 60 valid checks.

Artificial reptile refugia

Artificial reptile refugia consist of sheets of corrugated metal and/or roofing felt, sized 50 to 100cm which are used to facilitate the clearance of reptiles from a site. Reptiles are exothermic and therefore need to use external heat sources (such as the sun) to warm their bodies to allow them to hunt for and digest food. As the refugia will absorb

heat more readily than the surrounding environment, and also provide visual cover, reptiles are attracted to these features, making it easier to locate and capture reptiles from within the development site.

Approximately 75 artificial refugia (a combination of corrugated iron and roofing felt) will be positioned in all areas of habitat suitable for reptiles within the translocation site on the completion of initial vegetation clearance. Refugia will be supplied and positioned by the consultant ecologist.

The artificial refugia will be allowed to settle for at least two weeks prior to the commencement of trapping. Allowing them to “bed in” and reptiles to become acclimatised to their presence.

Destructive search

At the end of the trapping period key areas of site where there is the potential that small number of reptiles may remain present will be subject to a process of destructive clearance.

Examples of such features are rubble piles, earth banks and mammal burrows. The destructive clearance process will involve the use of a mini-digger to sensitively dismantle suitable features under the supervision of an ecologist. Any reptiles encountered during this process will be captured and released into areas of suitable habitat within the receptor site.

The final extent of areas requiring destructive clearance at the site will be determined by an ecologist on completion of the reptile trapping.

The initial soil layer should be stripped away using an excavator with a toothed bucket attached.

Once the destructive clearance and soil strip is complete the site will be considered clear of reptiles and enabling, and construction works will be allowed to commence.

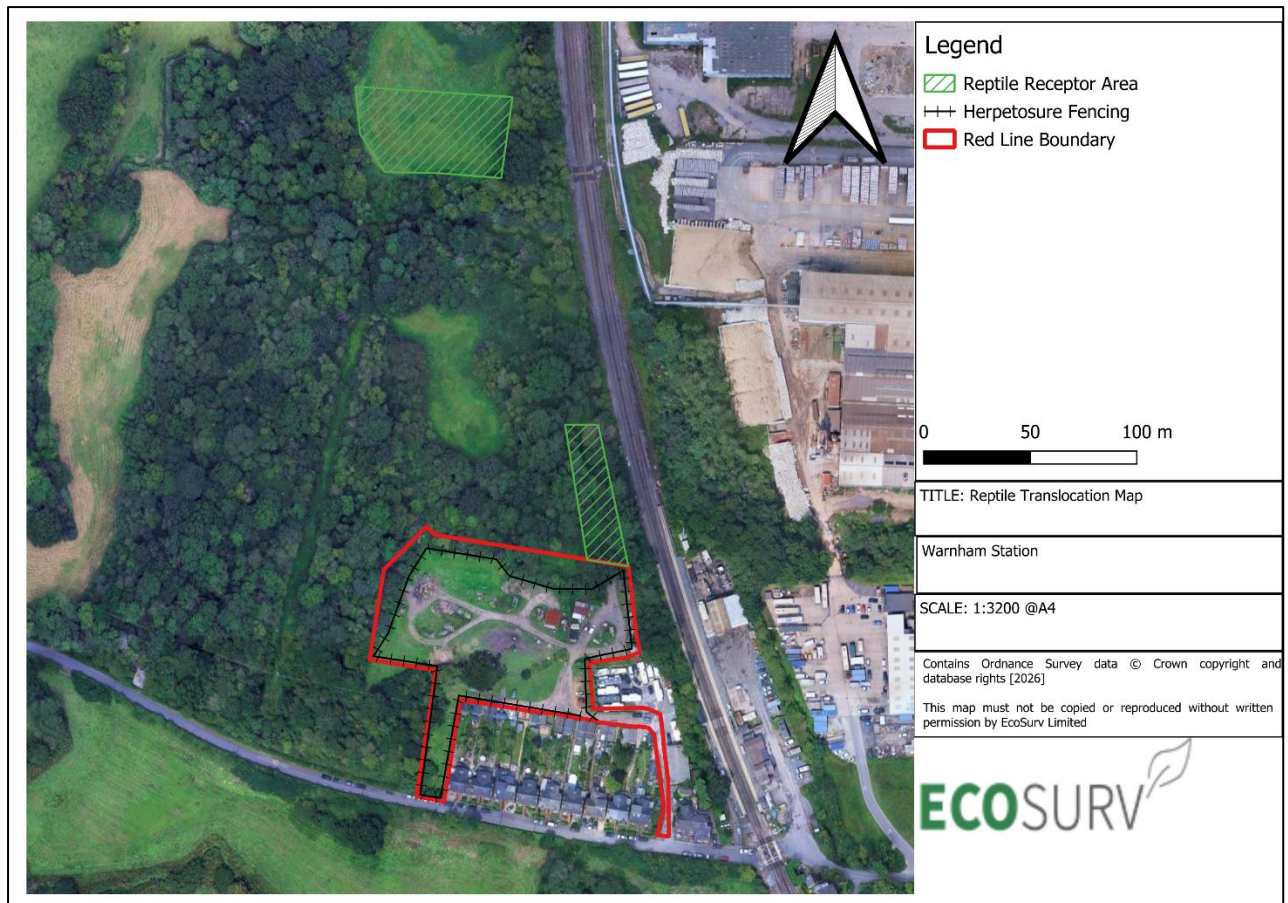


Figure 9. Reptile Mitigation Strategy

8.2.10 Woodland Protection

All tree protection fencing, and construction exclusion zones shall be positioned such that a minimum of a 15 metre buffer zone is maintained from the edge of the development and the retained woodland. All tree protection fencing, and construction exclusion zones shall remain in place for the duration of development phase.

The tree protection fencing shall be either stock mesh and barbed wire or 1.8 – 2 metre high deer mesh fence. There shall be no storage of materials (including soils), no ground disturbance, and no construction access within the construction exclusion zone including no pedestrian, vehicle, plant or machinery.

8.3 Assessment of Residual Impacts

The residual impact on habitats lies within the period of which mature habitats are lost and the proposed landscaping becoming established. The grass areas will be quicker to establish (~5 years) and could provide a nectar and foraging resources for invertebrates, bats and birds. Any tree planting will take longer to establish over a time frame of ~30years. Minor residual impacts are anticipated within these time periods.

Short term impacts for bats and birds are envisaged between the demolition of habitats, construction period and final development. The provision of suitable roosting and nesting features will help to offset some of this interim loss. Some minor residual impacts anticipated in the short term.

Residual impacts to badgers are unlikely due to the mobility of these species. However, in accordance with good practice an updated survey to identify field signs for badgers will be undertaken in advance of construction works commencing.

Residual risks to other species should be minimised and negated by following the mitigation strategies and compensation outlined within this report.

All reasonable measures to minimise the impacts of projected light spill on Habitats of Principle Importance, and associate fauna should be implemented, as far as is reasonably practicable in regard to maintaining the viability of the proposals. The impacts on bats cannot be wholly mitigated for whilst maintaining the levels of illumination required. Any introduction of lighting to an area will at least alter behaviour of bats. As such residual impacts are considered to minor.

9 CONCLUSIONS

An assessment of the significance of the possible ecological impacts that would result from the proposed development has been undertaken using guidelines produced by the Institute of Ecology and Environmental Management (CIEEM, 2018).

The majority of habitats on site are of no more than site/local importance, with some areas of parish and county value. With the overall significance of impacts in the absence of mitigation and compensation is considered to be low.

Appropriate mitigation measures are outlined within this report to protect any retained habitat on site. The proposed landscaping offers some suitable compensatory habitat for the habitats found on site.

The assessment also considered the potential effects upon protected species arising from the development. The potential for impacts to occur on badger, great crested newt, breeding birds, bats, and other notable species have been considered. Mitigation measures have been proposed to ensure that impacts are avoided or minimised and that where possible enhanced habitats for these species will be delivered by the restoration of the site.

Through careful consideration of the potential impacts, it is concluded that the proposed development complies with current planning policy and that the legal implications arising from the residential development in respect of habitats and species have been addressed.

In order to ensure compliance, there is a requirement to secure the mitigation and compensation measures detailed within this report. The measures set out herein can be secured through appropriate conditions attached to any planning consent, and the development may therefore be delivered without harm to nature conservation interests. Specifically, it is anticipated that planning conditions would be used to secure:

- ❖ A District Level Licence for Great Crested newts will be required for the vegetation clearance when removing adjacent suitable habitats within the development as it will result in the destruction of GCN habitat and has the potential to kill/injure/disturb GCN.
- ❖ Habitat Monitoring and Maintenance Plan Landscape and Ecology Management Plan (HMMP): The creation and implementation of habitat creation measures should be guided and monitored by the HMMP. The HMMP will detail the establishment and long-term management of retained and newly created habitats to maximise benefits for wildlife. This should be prepared and put in place prior to operations commencing.

10 REFERENCES

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11 SITE IMAGES

No.	Description	Image
1.	Eastern corner of site.	
2.	Building 1	
3.	Building 2	

4.	Western portion of site.		
5.	South western corner of site.		
6.	Small chicken building.		

7.	Pond 1, known to contain GCN.		
8.	Pond 2, known to contain GCN		
9.	Pond 3, known to contain GCN		

10.	Pond 4, waterfowl pond.		
11.	Pond 5, subsequently dry during first round of bottle trapping.		
12.	Snuffle hole area.		

12 APPENDIX

12.1 Additional Information for the Legislation of Protected Habitats and Species

Species Legislation

European protected species (EPS)

These animals are fully protected through inclusion within Schedule II of The Conservation of Habitats and Species Regulations 2010(as amended).

This legislation makes it an offence to deliberately capture, kill or disturb an EPS. For the purposes of this legislation disturbance has been defined by the European Commission (EC) and Natural England as that likely to significantly affect: i) the ability of a significant group of an EPS to survive, breed, rear or nurture their young or ii) the local distribution or abundance of the species (EC, 2007, Natural England, 2007). Further detail on what constitutes significant disturbance and significant groups in relation to most EPS can be obtained from these guidance documents.

It is also an offence under the Habitats Regulations 1994 (as amended) to damage or destroy and/or obstruct access to a breeding site or resting place of these species; please note the former is a strict liability offence. This legislation applies to all life stages of an EPS, including eggs. Former defences relating to actions being the incidental result of a lawful operation or taking place within a dwelling house no longer apply to offences under the Habitats Regulation 1994 for EPS.

EPS potentially present in the survey area:

- ❖ All bats within England and Wales.
- ❖ Great Crested Newt.

Bats

The primary legislative protection for bats is under the Habitats Regulations 1994 through designation as an EPS (see above). However, bats are also partially protected in England and Wales through their inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally or recklessly disturb a bat whilst it is using a place of rest or shelter. This applies to individuals, but is subject to a number of defences including if the disturbance was the 'incidental result of a lawful operation that could not reasonably have been avoided'. The legislation applies to all life stages.

Great crested newt

The primary legislative protection for GCNs is under the Habitats Regulations 1994 through designation as an EPS (see above). However, the GCN is also partially protected in England and Wales through its inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to intentionally or recklessly disturb a GCN whilst it is using a place of rest or shelter. This applies to individuals, but is subject to some defences including if the disturbance was the 'incidental result of a lawful operation that could not reasonably have been avoided'. The legislation applies to all life stages.

Breeding birds

All wild birds in England and Wales are protected under Section 1 of the Wildlife and Countryside Act, 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird, or take, damage or destroy the nest (whilst being built or in use) or its eggs. Species listed on Schedule 1 of The Act, e.g. kingfisher *Alcedo atthis*, receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest, or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird. Further enhanced statutory protection is provided for bird species included on Annex 1 of the Wild Birds Directive.

Badger

Badgers receive protection under the Protection of Badgers Act 1992 and the Wildlife and Countryside Act 1981 (as amended), under Schedule 6, Section 11. Under this legislation badgers receive protection from killing or taking by certain methods. It is also an offence to wilfully kill, injure, take or attempt to kill, injure or take a badger or interfere with a badger sett by damaging a sett or any part thereof. It is also an offence to wilfully destroy a sett, obstruct access to a sett or disturb a badger while occupying a sett. The 1992 Act defines a badger sett as "any structure or place, which displays signs indicating current use by a badger".

Penalties for offences can be severe with fines of up to £5000, plus six months imprisonment for each illegal interference, badger death or injury. It is recognised however that there exists a range of certain legitimate activities which need to be conducted in spite of badger presence.

Other wildlife protection/control

The main legislation dealing with species protection/control at the national level is the Wildlife and Countryside Act 1981 (as amended). Plants listed under Schedule 8 and animals under Schedule 5 of the Act receive varying levels of protection. There are also measures to control the spread of non-native species contained in Schedule 9. Other relevant legislation may include the Protection of Badgers Act 1992 and the Wild Mammals (protection) Act 1996. Details of the protection/control afforded to the following species/groups considered of relevance to the survey area are given below.

Invasive plant species

Heracleum mantegazzianum giant hogweed, *Fallopia japonica* Japanese Knotweed and *Impatiens glandulifera* Indian Balsam are listed in Schedule 9, Part II of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to plant these species or otherwise cause them to grow in the wild. Any material containing Japanese knotweed or giant hogweed is also identified as 'controlled waste' under the Environment Protection Act 1990 and must be disposed of properly at landfill.

Rare and/or protected plants

Some plants are listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally pick, uproot, destroy or trade in these plants. Other plants appear on national red data lists, or are considered nationally, regionally or locally scarce, though these classifications do not confer any legal protection.

Other invertebrates

In England and Wales the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended) offer legal protection to certain invertebrate species. Under the

aforementioned legislation, 17 invertebrate species in Britain have European protection and 45 species in England and Wales are fully protected at a national level.

Other Mammals

All non-domesticated mammal species including common species, such as rabbit *Oryctolagus cuniculus* and deer, receive protection under the Wild Mammals (Protection) Act 1996. This act protects wild mammals from certain cruel acts and makes it an offence to intentionally inflict unnecessary suffering on wild mammals.

Habitat Legislation Statutory Protected Sites & Features

Ramsar sites

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. Originally intended to protect sites of importance, especially as waterfowl habitat, the Convention has broadened its scope over the years to cover all aspects of wetland conservation and wise use, recognising wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. They generally receive legal protection under the Wildlife and Countryside Act 1981 (as amended) as most UK Ramsar sites are also designated as SSSIs (see below). The majority are also SPAs (see below). Planning Policy Statement (PPS) 9 (see Section 2.3) also recommends that all Ramsar sites receive similar protection from development as Natura 2000 sites.

Special Areas of Conservation (SAC)

SACs receive full protection under the EC Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora). SACs are areas that 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 of the Directive. SACs, together with Special Protection Areas (SPAs), form the Natura 2000 network. Natura 2000 sites are protected under The Conservation of Habitats and Species Regulations 2010(as amended) and any development likely to have significant impacts upon such a site will have to be assessed for its implications on the site's conservation status, an obligation under the aforementioned Regulations.

Special Protection Areas (SPAs)

SPAs receive full protection under the EC Birds Directive (Council Directive 79/409/EEC on the conservation of wild birds). SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union. SPAs, together with SACs, form the Natura 2000 network. Natura 2000 sites are protected under The Conservation of Habitats and Species Regulations 2010(as amended) and any development likely to have significant impacts upon such a site will have to be assessed for its implications on the site's conservation status, an obligation under the aforementioned Regulations.

Sites of Special Scientific Interest (SSSIs)

SSSIs provide full statutory protection for the best examples of the UK's flora, fauna, geological, or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs are now notified under the Wildlife and Countryside Act 1981 (as amended). Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000. They are designated in England by Natural England who have powers to prevent damaging operations within and around the site. There is an obligation upon land owners and relevant authorities to notify Natural England if any activity they undertake may impact upon the conservation status of a SSSI.

National Nature Reserves (NNRs)

NNRs are fully protected from damaging operations within and around them under the National Parks and Access to the Countryside Act 1949 (as amended) and the Wildlife and Countryside Act 1981 (as amended). NNRs contain examples of nationally important natural and semi-natural terrestrial and coastal ecosystems in Great Britain.

Local Nature Reserves (LNRs)

LNRs are designated under the National Parks and Access to the Countryside Act 1949 (as amended) as areas of geological or wildlife interest of special local interest. They are normally owned and managed by local authorities, though increasingly local wildlife trusts are taking over this role. They can be protected from damaging operations within or around them through local bylaws or the policies of the local development framework.

Local Wildlife Sites (LWS) / Sites of Importance for Nature Conservation (SINC's)

SINC's/LWSs are identified by local planning authorities (in this case Durham County Council) on account of their value for wildlife. These receive a measure of protection through local planning policies.

Important hedgerows

The Hedgerows Regulations 1997 seek to protect 'important' hedgerows in the countryside by controlling their removal through a system of notification to the relevant local planning authority.

Tree Preservation Orders (TPOs)

TPOs give some measure of protection to individual trees, groups of trees or even entire woodlands that are considered by the Local Planning Authority (LPA) to be of value. They are protected under the Town and Country Planning Act 1990 and the Town and Country Planning (Trees) Regulations 1999. Trees subject to a TPO are protected from deliberate damage, and an application to the LPA would be necessary to remove any such tree.