



Landscape, Arboriculture and Ecology

Surveys – Plans – Assessments - Mitigation – Solutions – Methodology

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Preliminary Ecological Appraisal (PEA)

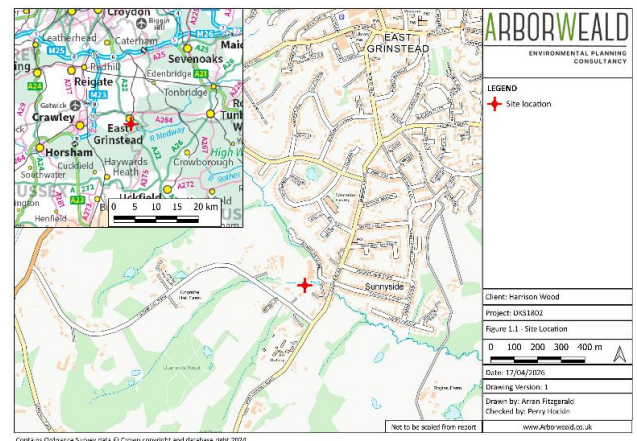
Land Rear of The Bulrushes

Coombe Hill Road

East Grinstead

West Sussex

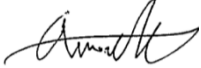
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Declaration: The information which I have prepared and provided for this report is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct; I confirm that the opinions expressed are my true and professional bona fide opinions. Printed: Arran Fitzgerald BSc (Hons.), MSc – Assistant Ecologist Signed: 					

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No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of species abundances or habitat management efficacy described in the report.

The material presented in this report is confidential. This report has been prepared for the exclusive use of the client and shall not be distributed or made available to any other company or person without the knowledge and written consent of the author. Notwithstanding confidentiality, this document may be utilised and publicly displayed with reference to the development proposal planning application.

This report and all survey work have been prepared to British Standard 42020 and rely on information and methodology from the Joint Nature Conservation Committee and the Chartered Institute of Ecological and Environmental Management.

Additionally, this report relies on information from other third parties, some of which may include, but not be limited to; DEFRA's MAGIC database, local record centres, local wildlife spotter groups such as [REDACTED] groups, and the NBN atlas.

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EXECUTIVE SUMMARY

- 0.1 Arborweald Environmental Planning Consultancy (AEPC) were commissioned by Harrison Wood for Land Rear of The Bulrushes, Coombe Hill Road, East Grinstead, West Sussex, RH19 4LZ, TQ 39145 36884 to undertake:
- Preliminary Ecological Appraisal (PEA)
- 0.2 The habitats present within the site boundary comprise modified grassland, tall ruderal vegetation, bramble scrub, other tall herb and fern vegetation, hardstanding, a stream corridor, hedgerow and scattered trees.
- 0.3 Development plans on site comprise:
- Development proposals on site comprise the construction of a new two-storey dwelling with associated garage, access, parking, and landscaping.
- 0.4 The primary findings of this report were:
- The proposed development is to be exempt from the statutory Biodiversity Net Gain requirements applicable to minor developments from 31 July 2026, as the site measures 0.185 hectares and is therefore below the 0.2-hectare threshold set out within the BNG reform legislation.
 - The proposed development has been designed to largely avoid the most ecologically valuable areas of the site, with the northern stream buffer and associated trees to be retained and enhanced as part of the scheme. The main development footprint is focused within the least biodiverse section of the site.
 - Habitats on site are generally of low ecological value and comprise predominantly disturbed and recently managed ruderal vegetation, modified grassland, fragmented hedgerows, scattered trees and a narrow stream corridor along the northern boundary. Vegetation structure and connectivity across the site are generally poor, with habitats largely representative of suboptimal semi-rural edge habitats within the local landscape.
- 0.5 The primary recommendations of this report are:
- No further Phase 2 surveys are considered necessary.
 - A precautionary approach for great crested newts should be implemented during vegetation clearance and groundworks through a site-specific Precautionary Working Method Statement (PWMS).
 - Biodiversity enhancements should be incorporated into the development and section 6 of this report provides detail on potential enhancements.

1 INTRODUCTION

- 1.1 Arborweald Environmental Planning Consultancy (AEPC) were commissioned by Harrison Wood for Land Rear of The Bulrushes, Coombe Hill Road, East Grinstead, West Sussex, RH19 4LZ, TQ 39145 36884 to undertake:
 - Preliminary Ecological Appraisal (PEA)
- 1.2 The objectives of the PEA were to assess the potential of the site to support protected species and/or species of conservation importance by identifying potential habitat for protected species and/or species of conservation concern and by evaluating the constraints that the presence of any protected species or species of conservation concern may place on the proposed re-development of the site.
- 1.3 The objective of the Phase 1 habitat survey was to assess what habitats are found on site, and their respective condition using the BMA condition scoring matrix.
- 1.4 This document has been written with reference to the following documents:
 - 26032_01_Land at Streatfield Place_East Grinstead – topo.pdf
 - HW - BLOCK PLAN – APP.pdf
 - HW - Proposed Elevations – APP.pdf
 - DKS1802.3 - LTR Bulrushes_Coombe Hill Rd_East Grinstead_RG19 4LZ - BS5837 Report.pdf – (Arborweald, 2026)

Surveyors and author competency

- 1.5 Surveys were undertaken on the 14/04/2026 by Assistant Ecologist Arran Fitzgerald BSc (Hons.), MSc
- 1.6 Report writing was undertaken by Assistant Ecologist Arran Fitzgerald BSc (Hons.), MS

Arran Fitzgerald – Assistant Ecologist

Arran Fitzgerald is a qualified and experienced ecologist who became associated with Arborweald in 2023 as a part-time field surveyor and ecological clerk of works before joining full time in early 2025.

Having achieved a first-class honours degree in Zoology, followed by a master's in applied wildlife Conservation, Arran has since worked in Ecological Landscaping, implementing environmental mitigation measures for medium to large-scale infrastructure and conservation projects across the UK.

Arran's career spans a diverse range of ecological projects, from the installation of hibernacula and newt fencing to woodland/hedgerow regeneration efforts. He has also worked on innovative environmental solutions, such as using hydroseeding techniques to remediate toxic mining tailings. With a balanced approach to conservation and restoration, Arran's dedication extends beyond his professional work, with extensive volunteer experience that has enriched his understanding of ecology from a hands-on perspective.

Legislation and Policy

Protected species

- 1.7 Certain habitats and species including nesting birds, bats, dormice, and great crested newts, are afforded protection under the Conservation of Habitats and Species Regulations 2017 and the Wildlife & Countryside Act 1981 (as amended). Further information on the legislation is included in Appendix A.
- 1.8 In general, the above legislation makes it an offence to:
- Deliberately/intentionally or recklessly kill, injure, or take a protected species;
 - Intentionally or recklessly damage, destroy or obstruct access to any place that a protected species uses for shelter or protection whether the species is present or not;
 - Intentionally or recklessly disturb a protected species while it is occupying a structure or place that it uses for shelter or protection;
 - Deliberately take or destroy the eggs of species protected by this legislation (such as nesting birds).

Natural Environment and Rural Communities Act

- 1.9 Section 41 of the Natural Environment and Rural Communities Act (2006) lists the species and habitats of principal importance for the conservation of biodiversity in England and acts as a guide to local authorities in implementing their duties under Section 40, to have regard to the conservation of biodiversity in England.

National Planning Policy Framework

- 1.11 Under the National Planning Policy Framework (NPPF, August 2026), protected sites and species are a material consideration in determining planning applications in terms of minimising impacts on biodiversity. Policy N2 (Improving the natural environment) requires that, to contribute positively to the natural environment and support nature's recovery, development proposals should consider the environmental qualities of land proposed for development, including habitats, landscape character and the natural beauty of the countryside and identify opportunities for those qualities to be conserved or enhanced, including through biodiversity net gain requirements where these apply,

and should take suitable opportunities to strengthen ecological networks and conserve existing natural features such as established trees and hedgerows.

1.12 National Planning Policy guidance uses a mitigation hierarchy, whereby:

- Potential impacts are first avoided through changes to design plans
- Unavoidable impacts are mitigated against to reduce the negative effect of the impact;
- Finally, residual impacts that remain after avoidance and mitigation measures are applied are compensated for (BS 42020, 2013, Section 5.2).

1.13 Further to this, it is a requirement under National Planning Policy for developers to actively enhance the biodiversity value of development projects.

Exemptions from the Biodiversity Metric Assessment

1.14 Certain developments are exempt from the Biodiversity Metric Assessment (BMA). They include:

- **Existing planning applications** - If a planning application for a development was made before day one of mandatory BNG on 12 February 2024, the development is exempt from BNG.
- **Retrospective applications** – Currently, retrospective applications are exempt from BNG requirements.
- **Variations of planning permission** - Transitional arrangements also apply for variations to existing planning permissions.
- **Developments below the threshold** - A development that does not impact a priority habitat and impacts less than:
 - 5 square metres (5m by 5m) of on-site habitat
 - 5 metres of on-site linear habitats such as hedgerows

A development 'impacts' a habitat if it decreases the biodiversity value
- **Householder applications** - These are applications made by householders as defined within article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2015.
- **Self-build and custom build applications** - You must meet all of the following conditions to qualify for an exemption as a self-build or custom build. The development must:
 - consist of no more than 9 dwellings
 - be on a site that has an area no larger than 0.5 hectares
 - consist exclusively of dwellings that are self-build or custom housebuilding as defined in section 1(A1) of the Self-build and Custom Housebuilding Act 2015
- **Minor developments below 0.2 hectares (from 31 July 2026)** - From 31 July 2026, certain minor developments will be exempt from mandatory Biodiversity Net Gain requirements where the development site measures less than 0.2 hectares and meets the relevant exemption criteria set out within the legislation.

- **Other exemptions** – High speed rail transport network, urgent crown developments, and works under Development Consent Orders (DCOs) such as nationally important infrastructure projects, including permitted development rights.

Site Description

- 1.15 The site is located in East Grinstead, West Sussex (Ordnance Survey Grid Reference for the centre of the site: TQ 39145 36884). The development site is approximately 0.18ha in area and comprises areas of modified grassland, tall ruderal vegetation, bramble scrub, other tall herb and fern vegetation, hardstanding, a stream corridor, hedgerow and scattered trees.
- 1.16 The location of the site is shown in Figure 1.1 and the extent of the site boundary is shown in Figure 1.2.
- 1.17 The habitats in the wider landscape comprise a mixture of rural and urban habitats. The eastern extent of the site is associated with the built-up residential area of Sunnyside on the outskirts of East Grinstead, whilst the wider surrounding landscape comprises agricultural fields, grassland, woodland and scattered pockets of rural residential development. The wider landscape also supports a relatively dense network of streams, rivers and associated waterbodies.

Development Proposals

- 1.18 Development plans on site comprise:
- Development proposals on site comprise the construction of a new two-storey dwelling with associated garage, access, parking, and landscaping.

Survey Constraints

General constraints

- 1.19 Due to seasonal behaviour of animals and the seasonal growth patterns of plants, ecological surveys may be limited by the time of year in which they are undertaken.
- 1.20 The information gathered for this ecological survey has facilitated an evaluation of the habitats on site and the likely use of the site by legally protected and notable species. This survey has also given appropriate baseline data for the determination of the requirement for further surveys and/or mitigation and enhancement works.
- 1.21 The UKHab habitat map has been reproduced from detailed field notes and informed by aerial imagery, OS mapping and site maps provided by the client. The accuracy of this figure is therefore ultimately guided by the accuracy of these sources and can only be relied upon to a certain degree of resolution.

Site specific constraints

- 1.22 The site has been subject to recent vegetation clearance works. As such, areas currently comprising sparsely vegetated ground have been backdated to tall ruderal vegetation within the Biodiversity Metric due to evidence of recent clearance and the remaining due to evidence of recent clearance, extensive cut ruderal material remaining on site, and the surviving ruderal species assemblage.

2 METHODS

Desk Study

- 2.1 The Multi Agency Geographic Information for the Countryside (MAGIC) website provided by the Department for Environment, Food and Rural Affairs (DEFRA) was consulted for information with regard to protected habitats and species within 2 km of the proposed development (red line) boundary.
- 2.2 Aerial photos of the site (Google, 2020) were examined to determine habitats surrounding the site and hence species likely to be present in order to make appropriate recommendations in the wider landscape context.
- 2.3 Following guidance contained within sections 5.5 and 6.2.1 of BS 42020:2013, records from the local biodiversity record centre may be deemed necessary, in which case the results are screened for relevance. This involves an analysis (in conjunction with DEFRA's MAGIC map software) of connectivity between recorded instances and the site boundary. Records are also screened for age; records are prioritised from the last 10 years, with records from the past 20 and 40 years deemed as less accurate, but still included where possible.

Report lifespan

- 2.4 The lifespan of this appraisal and the ecological survey information contained herein has been determined based on CIEEM's Advice Note: On the Lifespan of Ecological Reports and Surveys (CIEEM, 2019), an assessment of the likelihood of presence of important ecological features on Site and consideration of how the ecological status of these features on Site may change over time.
- 2.5 If the commencement of site works is delayed beyond 18 months from the date of issue of this report, an update site walkover should be undertaken by a suitably experienced ecologist.
- 2.6 Following the update walkover, the ecologist will need to determine whether there have been any material changes to the ecological baseline, the potential impacts of the proposed development and/or the ecology-related legal risks associated with the proposed development.
- 2.7 If there have been any material changes in baseline ecological conditions, the potential ecological impacts of the proposed development and/or associated legal risks, or any material changes to relevant ecology-related legislation, standing advice, best practice and/or guidance, an updated report should be produced by a suitably experienced ecologist.

Field Survey

Phase 1 habitat survey

- 2.8 The survey was conducted in accordance with The Handbook for Phase 1 Habitat Survey (JNCC, 2016), and included searches for signs of protected species, as described in the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).
- 2.9 A Phase 1 survey of the site was carried out in order to evaluate any habitat on the site, and to gather data to inform the Biodiversity Metric Assessment.
- 2.10 Consideration was also given to habitats outside the site boundary, in order to evaluate the ecological context of the site within the wider landscape. Adjacent habitats were also considered with respect to their own ecological value and their potential to enhance the ecological value of habitats within the site.
- 2.11 Searches were made for invasive non-native plant species focussing on those species currently listed in the revised Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Species were listed split into non-natives and invasive non-natives with different advice for each.
- 2.12 The plant species nomenclature follows that of Stace (2019). Plant species observed within each habitat type were recorded using the DAFOR system which stands for Dominant, Abundant, Frequent, Occasional or Rare.

All references to relevant literature required to maintain industry best practice and compliance with legislation is listed in the References section of this report.

Preliminary Ecological Appraisal (PEA)

- 2.13 The survey was conducted in accordance with The Handbook for Phase 1 Habitat Survey (JNCC, 2016), and included searches for signs of protected species, as described in the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017).
- 2.14 A Preliminary Ecological Appraisal survey of the site was carried out in order to evaluate any habitat on the site with the potential to support protected species and/or other species of conservation concern that could be relevant in respect of planning policies.
- 2.15 In addition, the habitats within the survey area were assessed for their potential to support legally protected or otherwise notable flora and fauna. Where suitable habitat was identified on site, a search was conducted for signs indicating the presence of protected species such as droppings, burrows, tracks and evidence of feeding. Where species are not specifically evaluated, this indicates that no habitat of potential value for these species was identified during the survey.
- 2.16 Consideration was also given to habitats outside the site boundary, in order to evaluate the ecological context of the site within the wider landscape. Adjacent habitats were also considered with respect to their own ecological value and their potential to enhance the ecological value of habitats within the site.
- 2.17 Searches were made for invasive non-native plant species focussing on those species currently listed in the revised Schedule 9 of the Wildlife and Countryside Act 1981 (as

amended). Species were listed split into non-natives and invasive non-natives with different advice for each.

- 2.18 The plant species nomenclature follows that of Stace (2019). Plant species observed within each habitat type were recorded using the DAFOR system which stands for Dominant, Abundant, Frequent, Occasional or Rare.
- 2.19 All references to relevant literature required to maintain industry best practice and compliance with legislation is listed in the References section of this report.

Recommendation categorisation

- 2.20 So as to ensure biodiversity net gain for all development projects, the enhancement recommendations outlined in Section 6 of this report are categorised as Red, Amber or Green:

Red recommendations should be designated as conditions attached to a planning consent, and the development must not proceed without these enhancements / compensation measures being put in place, as they form a crucial role in achieving key ecological enhancement.

These recommendations are designed to be as effective and swift as possible, whilst taking into account cost and ease of implementation / future management in context with the scale of the development site.

Amber recommendations should be included within the development, however it is not necessary for them to be designated as conditions, as the author believes that their implementation are not key ecological enhancement measures. The client / developer should seriously consider including these measures to improve the biodiversity value of the site and to reduce their carbon footprint.

These recommendations are designed to be a good balance between efficacy and cost efficiency.

Green recommendations are additional enhancements which would improve the biodiversity value of the site; however, they are not key to achieving biodiversity net gain targets. These recommendations are aimed at clients wishing to 'go the extra mile' with their site so as to improve visual impact, public engagement, and property value

These recommendations are often more costly, either financially or in terms of time input in context with the size of the site, however they can also deliver longer term benefits for a greater original outlay.

- 2.21 Recommendations are prioritised into the above categories taking into account multiple factors, including, but not limited to:
- Habitat classification factors utilised by the Natural England Biodiversity Metric; for instance, how valuable would the enhancements be from a habitat creation / modification perspective
 - Likelihood of the client to undertake or follow through with recommendations, and to maintain recommendations post-development [as appropriate]

- Ease and cost of implementation, such that high impact and swiftly effective recommendations are prioritised over slower or less easily maintained enhancements on smaller development sites
- Surveyor and author experience of effectiveness of enhancement features in areas similar to the site, such as on other sites nearby, or enhancements already implemented as a part of local designated-site management plans (such as AONB strategies)

3 RESULTS

Desk Study

- 3.1 Records of designated sites and European sites within 2 km of the site boundary were obtained from Multi Agency Geographic Information for the Countryside (MAGIC) website provided by the Department for Environment, Food and Rural Affairs (Defra).

Designated sites

- 3.2 There are no international/European designated sites within 2km of the proposed site.
- 3.3 There is one (1) statutory designated site, Weir Wood Reservoir SSSI is located approximately 1,800m south of the site.
- 3.4 The site is set within the High Weald AONB.
- 3.5 The site is not designated for its specific nature conservation interest, and the scale of development is such that it is unlikely to significantly affect local designated sites.

Designated habitats

- 3.6 The habitats within the wider landscape comprise a mosaic of semi-rural habitats including grassland, woodland, streams and scattered waterbodies, interspersed with urban residential development. The eastern extent of the wider landscape is characterised by the suburban edge of East Grinstead around Sunnyside, whilst the surrounding areas retain a predominantly rural character.
- 3.7 Further to this, the wider landscape contains (5 Habitats of Principal Importance (HPIs) listed under Section 41 of the Natural Environment and Rural Communities Act 2006, including deciduous woodland, lowland meadows, traditional orchard, wood pasture and parkland, and areas of good quality semi-improved grassland. Numerous areas of ancient woodland are also present within the wider landscape

Waterbodies

- 3.8 There are 13 waterbodies within 500m of the site. The 500m buffer is shown in Figure 3.1.

- 3.9 Waterbody 1 is located approximately 75m west of the site within private land and was not visible at the time of survey. Based on desk study imagery, the waterbody measures approximately 408m². A stream appears to flow eastwards from this waterbody past the northern boundary of the site into Waterbody 2.
- 3.10 Waterbody 2 is the closest waterbody to the site, located approximately 30m east of the site boundary, and forms part of a wider stream and weir system controlling flow through the local area. Although desk study imagery suggests a maximum extent of approximately 481m², the feature was observed to be significantly smaller at the time of survey and likely swells ephemerally depending on local water levels and flow conditions. The waterbody is situated within a car park environment and therefore retains limited ecological connectivity with the development site.
- 3.11 Waterbody 3 is located approximately 35m north of the site and measures approximately 52.54m². The waterbody appears to comprise a small pond associated with surrounding grassland habitat. At the time of survey, the pond supported open water with natural earth banks and limited aquatic and emergent vegetation. Peking and mallard *Anas platyrhynchos* ducks were present. Although the waterbody is in relatively close proximity to the site ecological connectivity with the development site is considered limited. The grass is short sward and stream adjacent to the site boundary was observed to be fast-flowing at the time of survey.
- 3.12 Waterbody 4 is located approximately 230m west of the site within an agricultural field and measures approximately 576m². The waterbody appears likely to be used for agricultural purposes and is associated with boundary vegetation including hedgerow and scattered trees. Although some semi-natural connectivity is present locally, this is interrupted at Medway Drive and Dunnings Road where dense residential development, garden fencing and roads form significant barriers to connectivity with the site.
- 3.13 Waterbody 5 is located approximately 311m north-west of the site and measures approximately 385m². The waterbody is situated within the centre of an agricultural field and retains surrounding boundary vegetation of relatively good suitability. However, the feature is largely isolated from the site by extensive areas of short-sward grassland and an intervening industrial area, which together reduce ecological connectivity with the development site.
- 3.14 Waterbody 6 is located approximately 350m south-west of the site and measures approximately 836m². The waterbody is partially disconnected from the site by the adjacent art gallery and associated built form, which provide some obstruction to connectivity. However, a woodland corridor extending towards Coombe Hill Road does provide some limited ecological connectivity between the waterbody and the site.
- 3.15 Waterbody 7 is located approximately 380m south-east of the site and measures approximately 1,620m². The waterbody is situated within a pocket of woodland habitat and is likely heavily shaded throughout much of the day. Although some limited connectivity is present via a thin woodland corridor extending towards Dunnings Road, the waterbody is largely disconnected from the site by multiple large residential properties and associated gardens, driveways, roads and areas of hardstanding infrastructure including parking areas.
- 3.16 Waterbodies 8 and 9 are located approximately 410m north-east of the site and measure approximately 435m² and 2,665m² respectively. The waterbodies comprise a small and

large pond situated within the urban residential district of Sunnyside. Both waterbodies are considered completely disconnected from the site by the surrounding urban environment and associated infrastructure including dense residential development, roads and areas of hardstanding.

- 3.17 Waterbodies 10, 11 and 12 are all located over 460m from the site and retain little ecological connectivity with the development footprint. None of the waterbodies were clearly visible on satellite imagery due to dense surrounding tree cover and are therefore likely to be heavily shaded. Waterbody 11 has previously been subject to great crested newt survey effort, which returned a poor Habitat Suitability Index score and an inconclusive eDNA result with no great crested newt DNA detected.
- 3.18 Waterbody 13 is located on the edge of the 500m buffer and measures approximately 1,200m². The waterbody comprises a relatively large pond and is largely disconnected from the site by distance, intervening roads, built development and agricultural fields. Although the pond lies within approximately 180m of the stream corridor which passes the site, potentially allowing some transient dispersal via the watercourse corridor, significant connectivity with the development site is considered unlikely.

Biological Records

- 3.19 Following guidance contained within sections 5.5 and 6.2.1 of BS 42020:2013, it was deemed not necessary to obtain biological records from the local Biological Records Centre for the following reasons:
- Protected species impacts are predicted to be minimal.
 - Development is of a small scale.
 - Development can be contained within areas of lowest quality habitat, comprising ruderal vegetation.
- 3.20 Local records may be required at a later stage in development to further inform protected species presence in the wider landscape.

Field Study

Phase 1 Habitat Survey

- 3.21 The habitats present on site are shown in Figure 3.2 and are described in detail below
- 3.22 The site comprises a recently cleared field formerly dominated by ruderal vegetation, with much of the site now comprising disturbed and sparsely vegetated ground following recent clearance works. A stream forms the northern boundary of the site and supports a distinct riparian corridor approximately 5m in width comprising dense tall herb vegetation beneath scattered tree cover. The site itself is limited in tree stock internally. Most of the site is enclosed by fencing, with a Public Right of Way running along the eastern boundary. Toward the southern extent of the site, the habitat becomes wetter and grades into more rank modified grassland associated with a subtle change in topography. Hedgerows throughout the site are generally defunct, overgrown and gappy, comprising a mixture of native and ornamental species.

Modified grassland

- 3.23 Modified grassland was present within the south-eastern corner of the site and comprised approximately 75% vegetative cover. The habitat supported a mixed sward ranging between approximately 15cm and 50cm in height and was generally grass-dominated with extensive ruderal encroachment throughout. The habitat reflects slightly wetter and more rank conditions associated with a localised dip in topography within the southern extent of the site. Spring vetch *Lathyrus vernus* and whitish feather-moss *Brachythecium albicans* were also recorded within the habitat.
- 3.24 Species recorded within the habitat included meadow foxtail *Alopecurus pratensis*, common knapweed *Centaurea nigra*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, hard rush *Juncus inflexus*, meadow vetchling *Lathyrus pratensis*, hogweed *Heracleum sphondylium*, dandelion *Taraxacum* sp., bithynian vetch *Vicia bithynica*, purple moor-grass *Molinia caerulea* and pyramidal bugle *Ajuga pyramidalis*.

Tall ruderal vegetation

- 3.25 The habitat currently comprises largely sparsely vegetated ground following recent clearance works; however, based on the surviving ruderal species assemblage, extensive cuttings and retained woody detritus present throughout the site, the habitat has been backdated to tall ruderal vegetation within the ecological assessment. The habitat comprised recently cut scrub and ruderal vegetation over disturbed ground with scattered areas of ruderal recolonisation below approximately 5% cover. Drooping catchfly *Silene pendula* and feathered mosses were also recorded within the habitat.
- 3.26 Species recorded within the habitat included creeping thistle *Cirsium arvense*, greater burnet-saxifrage *Pimpinella major*, teasel *Dipsacus fullonum*, bramble *Rubus fruticosus* agg., broad-leaved dock *Rumex obtusifolius*, ox-eye daisy *Leucanthemum vulgare* and sweet william *Dianthus barbatus*.

Bramble scrub

- 3.27 A thin line of sparse scrub was present along the western boundary of the site, extending off the fence line in places. The habitat was dominated by bramble scrub with scattered native shrub species throughout and provided locally dense cover and habitat connectivity along the site boundary.
- 3.28 Species recorded within the habitat included bramble *Rubus fruticosus* agg., hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, lords-and-ladies *Arum maculatum*, greater knapweed *Centaurea scabiosa* and dog rose *Rosa canina*.

Other tall herb and fern

- 3.29 Other tall herb and fern vegetation was present as an approximately 5m wide buffer adjacent to the stream corridor and comprised around 65% vegetative cover. The habitat was generally dense and rank in structure beneath scattered tree cover and associated with the shaded riparian margin
- 3.30 Species recorded within the habitat included garlic mustard *Alliaria petiolata*, common nettle *Urtica dioica*, green alkanet *Pentaglottis sempervirens*, cleavers *Galium aparine*, lords-and-ladies *Arum maculatum*, lesser celandine *Ficaria verna* subsp. *fertilis*, bramble *Rubus fruticosus* agg. and ivy *Hedera helix*.

Trees

- 3.31 Scattered trees and linear tree cover were present predominantly adjacent to the northern stream corridor. The habitat comprised a mixture of mature broadleaved trees associated with the riparian corridor, including Norway maple *Acer platanoides*, hawthorn *Crataegus monogyna*, ash *Fraxinus excelsior*, alder *Alnus glutinosa*, goat willow *Salix caprea* and a small English oak *Quercus robur*. Trees within the northern stream-side group supported significant ivy growth and dense surrounding vegetation, increasing the structural complexity and ecological value of the habitat corridor. One mature alder displayed multiple woodpecker holes and features associated with veteran characteristics, whilst the mature ash displayed moderate crown loss associated with ash dieback.
- 3.32 Species recorded within the habitat included hawthorn *Crataegus monogyna*, Norway maple *Acer platanoides*, ash *Fraxinus excelsior*, alder *Alnus glutinosa*, goat willow *Salix caprea* and English oak *Quercus robur*.

Hedgerow

- 3.33 Hedgerows were present along the eastern and western boundaries of the site, alongside a smaller native hedgerow section within the south-eastern corner of the site. The western boundary comprised two ornamental cypress hedgerows associated with Monterey cypress *Cupressus macrocarpa* 'Goldcrest' and Leyland cypress *Cupressocyparis leylandii*, whilst the eastern boundary comprised a more outgrown

native hedgerow with scattered scrub development and self-seeded young trees throughout.

- 3.34 Species recorded within the habitat included bramble *Rubus fruticosus* agg., hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, dog rose *Rosa canina* and alder *Alnus glutinosa*.

Running water – stream

- 3.35 The stream forms the northern boundary of the site and comprised a relatively narrow watercourse approximately 1.5m in width at the time of survey. The feature supported relatively clear water with reasonable flow and steep earth banks in places, creating a moderately incised channel through the site boundary. The stream was partially shaded by adjacent riparian vegetation and scattered trees and continues eastward through a culverted section beneath the adjacent road network before connecting into Waterbody 2.

Other items

- 3.36 A section of tarmacadam footpath associated with the adjacent Public Right of Way encroaches into the north-eastern boundary of the site.

Protected Species

- 3.37 The habitats present on site provide suitable potential to support a range of protected species including [REDACTED] bats, breeding birds, dormice, great crested newts and reptiles. These species are considered in greater detail below, along with protected species for which the habitats on site are suboptimal or unsuitable.

Bats

Roosting

Trees

- 3.38 Standardly, a Ground Level Tree Assessment (GLTA) for bats is undertaken on all trees on site of an age or condition that they are likely to hold features suitable to support roosting bats.
- 3.39 These features are most typical on larger trees or those that have been wounded or veteranized, and their prevalence is also affected by the species of tree as some are more likely to survive the aging or veteranizing process than others.
- 3.40 Features searched for include lifted bark, lesions and cracks, holes, dead wood, cavities, and missing limbs.

Survey effort

- 3.41 No trees are currently being removed to facilitate development at the Land near Bullrushes, however the surveyor considered it prudent to assess all woody assets as identified in the accompanying Arboricultural Impact Assessment (AIA) document (Down To Earth, 2025).
- 3.42 Suitability scoring followed the methodology outlined in Section 2. The necessity for additional surveying is discussed in further detail in Sections 4 and 6 of this report, but mainly focuses on those trees that require immediate work to facilitate development.
- 3.43 Where trees were identified as having 'PRF-M' suitability and require immediate works to facilitate development, photographs of these features are provided. For all other trees, refer to the AIA report which contains photos for each tree for on-the-ground identification purposes.
- 3.44 The results of the GLTA are detailed in Figure 3.3 and Table 3.9

Table 3.9: Ground Level Tree Assessment survey results

#	Species	Features	Category	Removal / works planned?	Recommendations
T1	Alder	Mature alder adjacent to the stream corridor with dense ivy cover and multiple veteran characteristics including approximately seven woodpecker holes. Additional features included historic wounds, broken limbs and areas of occlusion throughout the main stem.	PRF-2	No works planned	No further surveys. Precautionary approach required for any tree works
T2	Goat willow	Young goat willow with no significant features suitable for roosting bats.	None	No works planned	No further surveys.
T3	English oak	Young English oak with no significant features suitable for roosting bats.	None	No works planned	No further surveys.
G1	Maple, Norway; Hawthorn, common; Ash c; Alder, c.	Mature stream-side tree group with significant ivy cover and dense surrounding vegetation. Features included occluded wounds, snapped limbs, rot pockets and minor cavities throughout the group. Mature ash displayed moderate crown loss associated with ash dieback.	PRF-I	No works planned	No further surveys. Precautionary approach required for any tree works
G2	Goat willow	Small group of young goat willow with no significant features suitable for roosting bats.	None	No works planned	No further surveys.

Summary of works

- 3.45 Some of the larger trees adjacent to the northern stream corridor hold features suitable to support roosting bats. The mature alder tree (T1) displayed multiple woodpecker holes, veteran characteristics and dense ivy cover, and was assessed as holding low suitability (PRF-I2) for roosting bats. In addition, tree group G1 supported significant ivy growth which may provide occasional low-quality sheltering opportunities for bats. Despite this, the trees remain relatively isolated within the wider landscape, with only minor connectivity provided through adjacent tree lines. All trees will remain unaffected by the proposals and no further bat surveys are considered necessary.
- 3.46 Subject to the application of appropriate mitigation measures, the works required to facilitate development are not considered to pose a threat to potential bat usage of trees, and all impacts can be avoided.

Commuting and foraging

- 3.47 The habitats within the site boundary provide ample foraging and commuting opportunities for bats with a wide range of unmanaged habitats including grassland, woodland, scattered trees and hedgerows.

Opportunities in the wider landscape

- 3.48 The wider landscape is predominantly rural, and as such bat roosting opportunities are likely to be present within the wider landscape in older buildings.

Evidence

- 3.49 No evidence of bats was recorded during the surveys

Breeding birds

Evidence

- 3.50 An abundance of bird activity was recorded during the survey, with species both heard and observed throughout the site and wider stream corridor. Species recorded included chiffchaff *Phylloscopus collybita*, robin *Erithacus rubecula*, blue tit *Cyanistes caeruleus*, nuthatch *Sitta europaea*, wren *Troglodytes troglodytes*, great tit *Parus major*, woodpigeon *Columba palumbus*, jackdaw *Corvus monedula*, blackbird *Turdus merula*, mallard *Anas platyrhynchos* and domestic peking ducks.

Nesting / roosting

- 3.51 No intact or defunct nests were discovered during the survey.
- 3.52 All of the habitats on site provide nesting opportunities for breeding birds, with further opportunities found within the wider landscape.

Foraging

- 3.53 Fruits on trees and shrubs within the site boundary provide ample foraging opportunities for larger birds.

Dormice

Evidence

- 3.59 No signs of dormice were recorded during the survey.

Key features for survival

- 3.60 The site provides limited habitat suitable to support dormice with few features key for their survival such as:
- Hazel coppice with dense canopy for arboreal activity, and of a mature enough stock to produce nuts;
 - Good connectivity with areas of higher quality habitat

Foraging and nesting

- 3.61 The Dormouse Conservation Handbook describes dormouse habitat as:
"...Deciduous woodland and scrub, where it feeds among the branches of trees and shrubs"
"It feeds on a wide variety of arboreal foods (Richards and others 1984), including flowers (nectar and pollen), fruits (berries and nuts) and some insects (especially aphids and caterpillars). They will also eat buds and young leaves"
- 3.62 Whilst small areas of scrub and occasional fruit-bearing species are present, these habitats are fragmented, species-poor and generally suboptimal in structure. Hedgerows on site are largely defunct, gappy and overgrown, lacking the dense continuous cover typically required by dormice for nesting and arboreal movement.

Connectivity and cover

- 3.63 The Dormouse Conservation Handbook states that:
"Except for hibernation, it [dormice] rarely descends to the ground and is reluctant to cross open spaces, perhaps because of the danger posed by owls and other predators."
- 3.64 Connectivity across the site is poor, with the development site itself comprising predominantly open habitats including disturbed ground, ruderal vegetation and modified grassland. Boundary hedgerows are generally disconnected and provide little functional connectivity to higher quality habitats within the wider landscape.

Opportunities in the wider landscape

- 3.65 The wider landscape provides greater suitability for dormice than the development site itself, particularly within the more wooded areas to the west which retain better habitat connectivity and structural diversity.

Great crested newts

Evidence

3.66 No signs of great crested newts were recorded during the survey.

Breeding habitat

3.67 There are no significant waterbodies located within the site boundary, although part of the stream corridor along the northern boundary extends marginally into the site at the northern boundary.

3.68 The site lies within a NatureSpace Red Impact Risk Zone for great crested newts, indicating the species is known within the wider landscape despite the generally limited suitability of the site itself.

3.69 Thirteen waterbodies are present within 500m of the site, although many are situated within private land and retain limited ecological connectivity with the development site due to intervening roads, residential development, hardstanding and areas of short-sward grassland.

- Waterbodies 2 and 3 represent the closest ponds to the development site. Waterbody 2 forms part of the wider stream and weir system surrounding the northern boundary and connecting westward toward Waterbody 1. The feature is situated within a car park environment and forms part of an actively managed weir system, with fluctuating water levels and flow regimes likely to reduce its suitability for great crested newts. The stream itself was observed to be relatively fast-flowing at the time of survey and may act as a partial barrier to great crested newt dispersal, potentially funnelling transient individuals downstream toward the weir system.
- Waterbody 3 is located approximately 35m north of the site and measures approximately 52.54m². The waterbody appears to comprise a small pond associated with surrounding grassland habitat. At the time of survey, the pond supported open water with natural earth banks and limited aquatic and emergent vegetation. Peking and mallard *Anas platyrhynchos* ducks were present. Although the waterbody is in relatively close proximity to the site, ecological connectivity with the development site is considered limited. The surrounding grassland is short-sward in nature and the stream adjacent to the site boundary was observed to be relatively fast-flowing at the time of survey, potentially acting as a partial barrier to dispersal. A Habitat Suitability Index (HSI) assessment undertaken for Waterbody 3 returned a score of 0.39, placing the pond within the 'poor' suitability category for great crested newts. The low score was largely attributable to the presence of waterfowl, limited macrophyte cover and poor surrounding terrestrial habitat.
- Waterbody 4 is located approximately 230m west of the site within an agricultural field and appears likely to be associated with agricultural usage. Although boundary vegetation including hedgerow and scattered trees are present, connectivity with the development site is significantly reduced by intervening residential development, roads and associated hardstanding. The pond is

therefore considered unlikely to support regular movement of great crested newts toward the site.

- Waterbody 5 is located approximately 311m north-west of the site within the centre of an agricultural field. Whilst the waterbody retains some surrounding vegetation of relatively good suitability, ecological connectivity with the site is limited by extensive areas of short-sward grassland and an intervening industrial area.
- Waterbody 6 is located approximately 350m south-west of the site and retains some limited ecological connectivity through a woodland corridor extending toward Coombe Hill Road. However, connectivity remains constrained by intervening built form associated with the adjacent art gallery and surrounding infrastructure.
- Waterbody 7 is located approximately 380m south-east of the site within a pocket of woodland habitat and is likely heavily shaded throughout much of the day. Although a thin woodland corridor extends toward Dunning's Road, the waterbody is largely disconnected from the site by residential properties, gardens, roads and parking
- Waterbodies 8 and 9 are located approximately 410m north-east of the site within the urban residential district of Sunnyside. Both waterbodies are considered effectively isolated from the site by dense urban residential development and associated infrastructure, making dispersal toward the site highly unlikely.
- Waterbodies 10, 11 and 12 are all located over 460m from the site and are likely heavily shaded due to dense surrounding tree cover. Waterbody 11 has previously been subject to great crested newt survey effort, which returned a poor HSI score of 0.39 alongside an inconclusive eDNA result with no great crested newt DNA detected.
- Waterbody 13 is located on the edge of the 500m buffer and, whilst relatively large in size, is separated from the site by substantial distance, roads, built development and agricultural land. Although the pond lies within proximity of the wider stream corridor, significant ecological connectivity with the development site is considered unlikely and any potential use of the site by great crested newts would likely be occasional and transient in nature.
- Additional to the waterbodies within 500m, the wider landscape is characterised by a network of streams, rivers and drainage features associated with the local weir system.

Terrestrial habitat

- 3.70 The site provides generally poor terrestrial habitat for great crested newts due to its recently cleared and open nature. Much of the site comprises disturbed ground, tall ruderal vegetation and modified grassland with relatively limited opportunities for shelter, foraging or refuge.

- 3.71 The areas of modified grassland are generally short-sward or rank in nature and are fragmented by disturbed ground and fencing. Whilst some retained woody material and ruderal vegetation are present, these features are limited in extent and quality when compared with the wider landscape.
- 3.72 Hedgerows on site are generally defunct, overgrown and disconnected, with large sections dominated by ornamental and non-native species. As such, they are considered to provide limited value as commuting habitat for great crested newts.

Hibernation habitat

- 3.73 Hibernation opportunities on site are considered negligible. The site largely lacks suitable refugia such as log piles, rubble piles, compost heaps or well-developed root systems, with only very limited opportunities potentially present beneath occasional mature tree roots adjacent to the northern boundary stream corridor.

Connectivity, wider landscape, and access

- 3.74 Access to the site for great crested newts is considered relatively limited due to the fragmented nature of the surrounding landscape, intervening roads, residential development, fencing and areas of hardstanding.
- 3.75 The wider landscape retains some connectivity through the network of streams, ponds, woodland corridors and drainage features surrounding the site. However, many of the nearby waterbodies remain separated from the development site by urban infrastructure, short-sward grassland and other suboptimal terrestrial habitats.
- 3.76 Regardless, even if access was possible, newt use of the site would likely be incidental as the site does not contain any habitat or other features that newts would be specifically attracted to above the base desirability of the wider landscape. Newts would in fact likely avoid the site on account of its high predation risk, lack of breeding or foraging habitat, and lack of hibernation features.

Hedgehog

Evidence

3.77 No signs of hedgehog were recorded during the survey.

Key features for survival

3.78 Some features that hedgehogs require for survival include:

- Areas of tall grass or vegetation, or leaf litter offering a supply of invertebrates such as slugs and snails
- Gaps in fences, walls or hedgerows that allow movement between areas of higher quality habitat.
- Suitable hibernation sites, such as log piles, unlit bonfires, compost heaps, or other natural debris accumulations
- Dense undergrowth and scrub providing cover from predators and shelter for nesting
- Freshwater sources such as ponds, ditches, or damp areas that support invertebrates and provide drinking water

3.79 The site provides some suitable habitat features for hedgehogs including areas of tall ruderal vegetation, rank grassland, scrub and leaf litter associated with the stream corridor and boundary vegetation. Hibernation opportunities are limited and generally non-existent. The stream corridor may also provide a local water source and support increased invertebrate abundance. The site's position between suburban gardens and the surrounding semi-rural landscape, alongside the presence of scattered tree lines and boundary vegetation, creates a broader habitat mosaic potentially suitable for transient hedgehog usage.

Connectivity

3.80 Access is restricted as it is mainly fenced.

3.81 There is very little connectivity within the site itself due to its generally open nature, with the only notable sheltered corridor comprising the outgrown hedgerow along the eastern boundary.

Opportunities in the wider landscape

3.82 Although some hedgerows within the wider landscape are fragmented by roads and development, the surrounding tree lines, gardens and semi-natural habitats still provide reasonable opportunities for movement and dispersal throughout the local landscape.

3.83 Connectivity with higher quality habitat within the wider landscape is considered moderate due to the semi-rural nature of the surrounding area and the presence of connected green corridors associated with streams, tree lines and gardens.

Reptiles

Evidence

- 3.84 No signs of reptiles were recorded during the survey

Basking, commuting and foraging habitat

- 3.85 The site offers sub-optimal basking, commuting and foraging opportunities for reptiles, although suitability is generally limited by the open and recently disturbed nature of the site and the lack of continuous sheltered cover.

- 3.86 Areas of disturbed ground and occasional hardstanding may provide limited basking opportunities for reptiles, whilst sparse areas of grassland and boundary vegetation offer occasional refuge habitat. However, these features are highly fragmented and generally of poor suitability due to the open and recently disturbed nature of the site
Hibernation habitat

- 3.87 Hibernation opportunities on site are generally limited, with only occasional opportunities potentially present beneath mature tree roots and boundary vegetation. The majority of these features are associated with the site boundaries and are subject to regular disturbance from the adjacent Public Right of Way.

Connectivity, wider landscape, and access

- 3.88 Connectivity within the site itself is generally poor due to the open nature of the habitats present. However, some limited connectivity is provided by the stream corridor, boundary vegetation and outgrown hedgerows.
- 3.89 The wider landscape provides greater suitability for reptiles, particularly within the surrounding woodland corridors, edge habitats and larger expanses of semi-natural grassland adjacent to the site.

Other species

- 3.90 There are no other species of note present on site.

4 EVALUATION

Habitats

- 4.1 The habitats present on site are generally of low ecological quality and comprise locally abundant species typical of the wider landscape. However, a small number of mature trees adjacent to the northern stream corridor provide some higher quality habitat features for species such as bats and nesting birds.

Protected species legislation

- 4.2 Protected species legislation, its importance, and the penalties that would be incurred if an offence were committed are summarised in Appendix A of this report.

Species – Constraints vs. suitability

This section discusses two separate issues;

- **Habitat suitability** and **species constraints**
- **Future potential** to support protected species

Activities that present species-specific risks are outlined for each species in the tables below. The following risk assessment criteria are considered:

Likelihood of presence

Whether, given the site suitability, the species is likely to be present on site. This is decided by assessing the following elements:

- Direct evidence of that species, such as anecdotal or direct sightings
- Surrounding habitat – Where is the site positioned? Is it a suitable area such that a source population would utilise the site?
- Regardless of its suitability, can the species access the site, and if so, how easily?
- Does the site provide enough foraging opportunities to independently support the species, or would it only form part of a wider foraging territory?
- If on site, is the species likely to be predated upon, or is there significant cover?
- Are the right breeding or hibernation opportunities available on site or in the Zone of Influence (ZOI)?

The following categories are used*:

- **High** – the species has a good local population, can access the site / feature, and would thrive on site. Potential direct evidence.
- **Moderate** – the species is present in the wider landscape and would utilise the site, possibly as a part of a wider territory. Access may be restricted, or habitats may be

sub-optimal in some way. No direct evidence, or evidence is considered too old or faint to be reliable.

- **Low** – the species is unlikely to be on site due to a lack of suitable habitat, poor access, or likely absence from the wider landscape – either demonstrable, or likely absent due to surrounding habitat unsuitability. No evidence recorded. Incidental or ‘vagrant’ occurrence cannot be ruled out, however.
- **Discounted** – the species is known to be absent from the wider landscape, or access would be impossible due to multiple barriers such as inappropriate habitat. Incidental occurrence can be ruled out.

*for bat roosting, please refer to the GLTA and PRA methodology section of this report.

Necessity of actions

In this context, this refers to whether these actions / activities are required as a part of the proposed works. In the context of development this would mean that they have already been deemed necessary to facilitate development under the NPPF mitigation hierarchy, and avoidance measures have already been explored.

Where the action has been deemed not necessary (“No”) this implies that this action is not considered necessary within the next 6 months, and seasonal growth patterns or other factors are unlikely to change this fact. After this period, reassessment may be necessary to ensure all impacts are properly assessed.

Likelihood of species being affected

If present, would this species be affected by the proposed activity. This takes account of the likely population of the species, the scale of the activity, and the effect of any mitigation measures. The following categories are used:

- Very likely – where an impact is almost guaranteed, and additional assessment may be required, and / or bespoke mitigation must be designed into the scheme.
- Likely – where an impact is predicted due to the size of the species population or the scale of the activity; additional assessment may be required, with strong mitigation guaranteed to be required.
- Possible – where an impact could occur if the species is present, and standard mitigation will be required to reduce the risk to that species.
- Unlikely – species population is low enough, or scope of the activity is minimal, such that an impact can be mitigated through simple measures.
- Discounted – where an impact can almost be guaranteed not to occur, as that species is not present or scope of activity is *de-minimis*. No specific mitigation is required.
- N/a – where an impact is not possible, as that feature does not exist on site, or that activity is not necessary for the development.

Recommendations

Recommendations are expanded upon in Section 6; in section 4, the scale of mitigation is discussed and broken down into the following categories:

- Special mitigation will be required, such as additional surveys, special control measures, or changes to the design to mitigate otherwise unacceptable impacts, as outlined in Section 6.
- The species does not pose a constraint subject to the application of 'Standard mitigation' measures as outlined in Section 6. No special mitigation required.
- Whilst there is no guarantee, the surveyor has used the evidence gathered to confirm likely absence of this species or that this species poses no constraint to the works such that no specific mitigation will be required. No further action will be required for this species, and it will not be individually covered in Section 6. These species are still protected, and any changes to their status may result in mitigation being required.

Surveys required

Are extra surveys needed, such as species-specific surveys to inform the extent or type of mitigation *e.g. dusk bat emergence surveys*.

Future potential

Whether prudent habitat management can be targeted towards a species to improve the ability of that species to survive or encourage it into the site.

If a site fails enough of the suitability criteria, and this is unlikely to change - or is likely to get worse or be insurmountable (such as access) - then the site may not hold future potential to support that species.

Bats

- 4.3 All species of bat present in the UK receive full protection under The Conservation of Habitats and Species Regulations 2017, and the Wildlife and Countryside Act 1981 (as amended).

Suitability of habitats

Roosting

Buildings

- 4.4 There are no buildings on site.

Trees

- 4.5 A survey of the trees on site revealed that none of them were over-mature or veteranized individuals with typically age-related features that provide roosting opportunities for bats. Additionally, none of the larger trees on site will be removed to facilitate development.

Commuting and foraging

- 4.6 All of the habitats on site provide foraging opportunities for bats, although the main compound area is well lit with security lights such that bat activity would be confined to the darker areas at the edges along tree and hedge lines. These areas will be subject to minimal disturbance.

Likelihood of bat presence	Roosting	LOW
	Foraging / commuting	MODERATE

Impact risk assessment

Bats are typically most vulnerable to the following activities:

- Building disturbance, including but not limited to demolition, works to roof materials including tiles and sarking, works to hanging tiles or weatherboarding, and changes to or increases in artificial lighting.
- Tree removal, particularly those with roosting features.
- Habitat loss, particularly foraging habitat and commuting features.

Activity	Necessary on site?	Bats likely to be affected?	Recommendations
Works to buildings (where applicable)	No	N/a	N/a
Tree removal / pruning	No	Unlikely	Standard mitigation
Habitat loss	Yes	Possible	Compensatory planting scheme
Lighting design	Yes	Likely	Sensitive lighting plan

Surveys required?

- 4.7 No further bat surveys are considered necessary. Although a small number of trees adjacent to the northern stream corridor were identified as supporting low suitability Preliminary Roost Features (PRF-I2), all such trees will remain intact and unaffected by the proposed development. Subject to the implementation of standard precautionary mitigation and enhancement measures, impacts to bats are considered unlikely.

Future potential and compensation

- 4.8 The site has potential to support bats in future, as compensation and enhancement features will increase the ability of local populations to survive. Section 6 provides further details on enhancements.

Breeding birds

- 4.9 Breeding birds are protected by the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally kill, injure or take birds or their eggs, or to intentionally destroy or disturb a nest, when it is in use or being built.
- 4.10 Failure to observe mitigation measures leading to birds being disturbed whilst nesting would constitute a criminal offence.

Current usage

- 4.11 All of the habitats on site provide foraging and nesting opportunities for breeding birds.

Likelihood of bird presence	Nesting	MODERATE
	Foraging / commuting	HIGH

Impact risk assessment

Birds are typically most vulnerable to the following activities:

- Building disturbance, including but not limited to demolition, works to roof materials including tiles and sarking, and works to hanging tiles or weatherboarding.
- Tree and vegetation removal, particularly dense habitats such as scrub and introduced shrubs. Grasslands can also be used by ground-nesting birds.
- Habitat loss, particularly foraging habitat and nesting features.

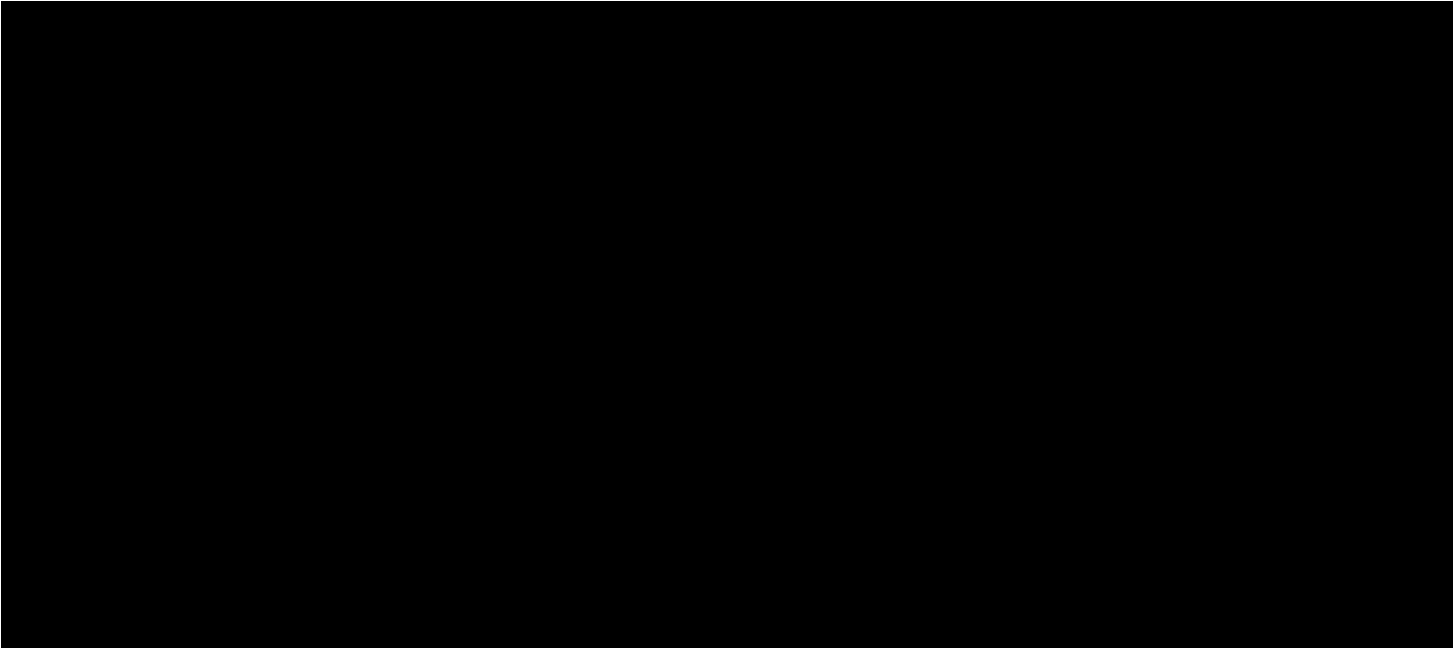
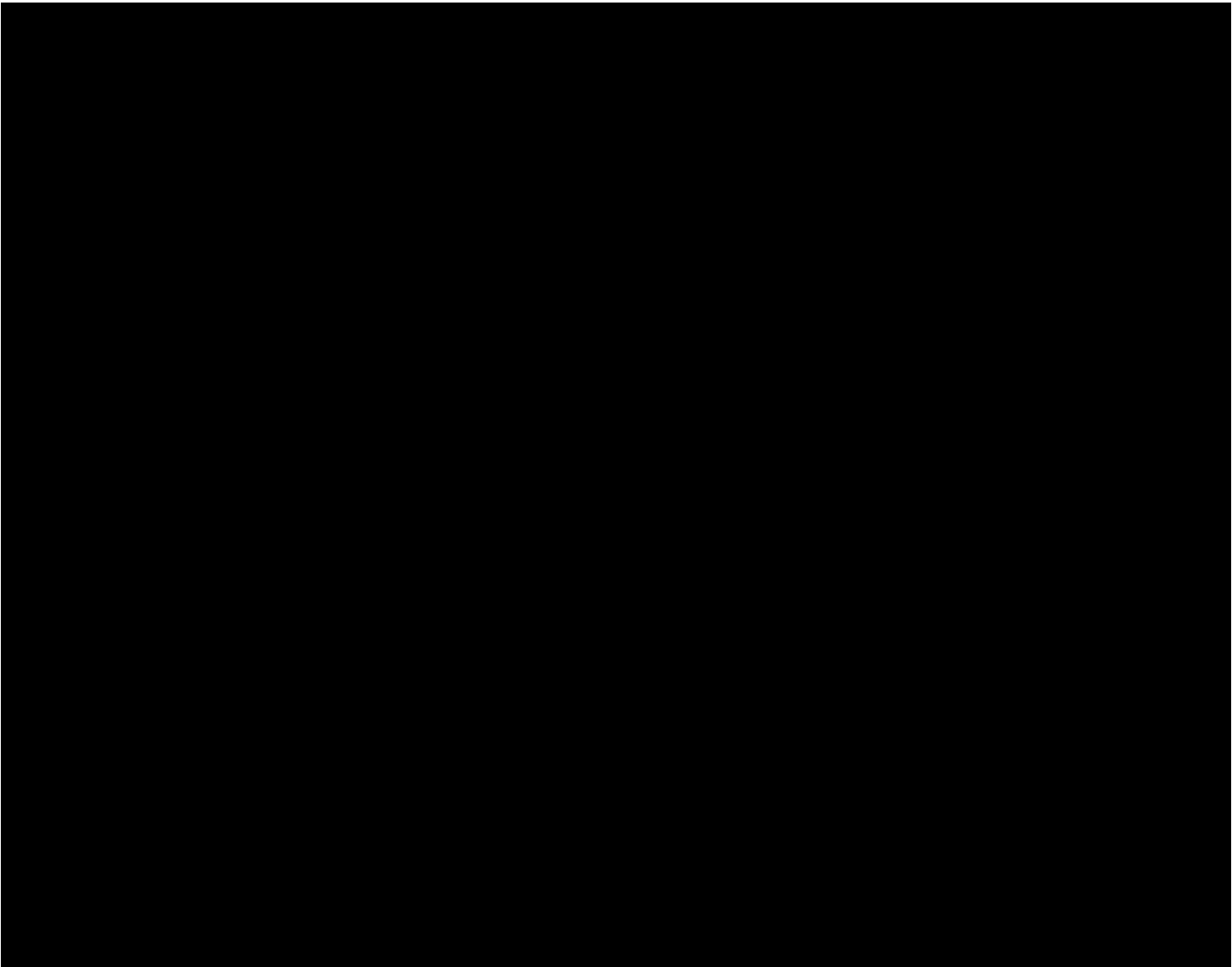
Activity	Necessary on site?	Birds likely to be affected?	Recommendations
Works to buildings (where applicable)	No	N/a	Standard mitigation
Tree removal / pruning	No	Very likely	Standard mitigation
Habitat loss	Yes	Likely	Compensatory planting scheme

Surveys required?

- 4.12 No. All risks to birds can be successfully mitigated through a combination of a precautionary approach, seasonal avoidance measures, and pre-works checks.

Future potential and compensation

- 4.13 The site has potential to support birds in future, as compensation and enhancement features will increase the ability of local populations to survive. Section 6 provides further details on enhancements.





Dormice

- 4.19 Hazel dormice are protected by the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is a criminal offence to intentionally or accidentally harm, capture, or destroy dormice, or to disturb a breeding area.

Current usage

Presence in the wider landscape

- 4.20 No signs of dormice were recorded during the survey.
- 4.21 The closest dormouse record returned by the NBN Atlas is located approximately 1.8km north-east of the site (2020-11-16). Ecological connectivity between this record and the development site is considered negligible due to the fragmented and heavily urbanised nature of the intervening landscape.

Foraging

- 4.22 Dormice generally require large areas of ancient woodland with healthy, stratified vegetative layers providing a heterogeneous habitat (Bright et al., 2006) connected by well-formed hedgerows and scrub belts. Whilst the Dormouse Conservation Handbook states that the absence of a single key forage species does not guarantee absence, it does reduce the likelihood of presence.
- 4.23 Foraging habitat on site is sub-optimal at best due to the generally species-poor and disturbed nature of the habitats present. Hedgerows are largely defunct, scraggly and gappy, with little structural diversity or significant food resources for dormice.

Connectivity

- 4.24 Connectivity within the site and wider landscape is considered poor. Boundary hedgerows are fragmented and disconnected, whilst the site itself is highly disturbed and broadly open in nature.
- 4.25 The surrounding landscape is dominated by open grassland, scattered tree lines and fragmented hedgerows, with little continuous arboreal connectivity suitable for dormice.

Nesting

- 4.26 Nesting opportunities on site are considered negligible due to the thin and exposed nature of the hedgerows and scrub present.

Hibernation

- 4.27 Hibernation opportunities are also considered negligible due to the lack of dense hedgerow bases, coppice habitat and suitable ground-level cover.

Overall desirability

- 4.28 It is the author's professional opinion that on account of the lack of hibernation habitat, extremely poor quality nesting habitat, lack of food plants within gappy linear features such as hedgerows, the short height and minimal successive scrub growth, and the lack of woodland coupled with its lack of crucial food plants, the site is undesirable for dormice.

4.29 Combining these factors, it is clear that the site represents an island of particularly poor-quality habitat for dormice within a wider landscape of disjointed, but otherwise better opportunities.

4.30 Whilst woodlands in the wider landscape of 2km or so do have some connectivity with each other, the most pertinent question is whether dormice would *want* to utilise the site given the number of better local opportunities. The author considers this unlikely as:

- The site does not form a land bridge between two areas of desirable habitat, such that dormice would commute across it; and
- The site cannot support dormice on its own on account of its size and lack of good quality woodland, as hedgerows and scrub can only provide supplementary habitat.

4.31 As such, the site is considered to be highly undesirable for dormice.

Likelihood of dormouse presence	DISCOUNTED
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Impact risk assessment

Dormice are typically most vulnerable to the following activities:

- Removal of dense vegetation, particularly woodland or other habitats well connected with large areas of woodland such as scrub and hedgerows
- Habitat loss, particularly foraging habitat and interruption or removal of commuting features.

Activity	Necessary on site?	Dormice likely to be affected?	Recommendations
Vegetation removal / pruning	No	Discounted	No specific mitigation required above a precautionary approach for this species
Habitat loss	No	Discounted	Compensatory planting scheme

Surveys or licencing required?

4.32 No further surveys or licencing are considered necessary due to the highly unsuitable nature of the habitats present on site for dormice. The hedgerows on site are fragmented, scraggly and poorly connected, whilst the wider site is heavily disturbed and broadly open in character. As such, dormouse presence is considered discounted.

Future potential and compensation

4.33 The site has no potential to support dormice in future, and as such no specific enhancements are recommended. This is on account of the lack of suitable habitat within or connectivity with the wider landscape / the density and type of development proposed such that there are no opportunities for enhancement for dormice.

Great crested newts

- 4.34 Great crested newts are protected by the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is a criminal offence to intentionally or accidentally harm, injure or destroy great crested newts or their eggs.

Current usage

Presence in the landscape

- 4.35 No signs of great crested newts were recorded during the survey. There are no significant waterbodies located within the site itself, although a small section of the stream corridor marginally encroaches into the northern boundary and the remainder runs along the northern edge of the site. The stream is considered unsuitable as breeding habitat for great crested newts due to its flowing nature and association with the wider weir system. Furthermore, the adjacent terrestrial habitat is generally poor and exposed, likely increasing predation risk for any amphibians attempting to migrate to or from the feature. However, the presence of occasional transient individuals within the stream corridor cannot be fully discounted.
- 4.36 The likelihood of a meta-population being present within the wider landscape is considered relatively high due to the presence of thirteen (13) waterbodies within 500m of the site boundary and the site's location within a NatureSpace Red Impact Risk Zone.
- 4.37 There is one record of great crested newt presence returned on the NBN Atlas approximately 350m north-east of the site (Hodgkiss, Dylan: 2021-06-10), likely associated with Waterbodies 8 or 9. Connectivity between these waterbodies and the development site is considered poor due to the dense urban residential character of the Sunnyside area and the associated roads, buildings and hardstanding infrastructure. An HSI assessment undertaken for Waterbody 3 returned a score of 0.39, placing the pond within the 'poor' suitability category for great crested newts. Furthermore, Waterbody 11 has previously been subject to survey effort, with an HSI score also of 0.39 (poor) and an absent and inconclusive eDNA result (MAGIC, 2019).
- 4.38 However, as discussed in Section 3 of this report, the majority of waterbodies within 500m are considered poorly connected or entirely disconnected from the site due to intervening roads, residential development, hardstanding and areas of short-sward grassland. Of the nearest waterbodies, only Waterbodies 1 and 2 retain any notable hydrological connectivity with the site via the northern stream corridor, although this connectivity is still considered suboptimal for great crested newts due to the flowing nature of the watercourse and associated weir system.
- 4.39 The site is partially surrounded by built development, roads, residential fencing, footpaths and areas of short-sward grassland which together provide generally negligible migratory habitat for great crested newts. Some limited connectivity is present to the west via tree corridors and associated semi-natural vegetation, although these links remain fragmented and indirect.

Foraging and commuting

- 4.40 The habitats on site provide generally poor foraging opportunities for great crested newts. Much of the site comprises recently disturbed ground, modified grassland and sparse ruderal vegetation with limited invertebrate abundance and little sheltered cover.

4.41 Amphibians are vulnerable to predation in areas of high exposure as they cannot flee as easily. This limits them to short ventures into short sward, crossing shorter gaps, or remaining within taller sward vegetation.

4.42 The site itself is broadly open in nature, with only occasional boundary vegetation, outgrown hedgerows and the northern stream corridor providing limited cover. The majority of the site is therefore considered suboptimal for commuting great crested newts, particularly given the fragmented and disconnected nature of the surrounding habitats.

Breeding

4.43 There is no breeding habitat on site such that a meta-population of newts would not be able to establish on site.

Brumation

4.44 The site provides suboptimal brumation opportunities for great crested newts, limited primarily to occasional tree roots and dense vegetation adjacent to the northern boundary stream corridor.

Overall desirability

4.45 Combining these factors, it is clear that the site represents an island of particularly poor-quality habitat for newts within a wider landscape of disjointed, but otherwise better opportunities.

4.46 Whilst waterbodies in the immediate locale do have some connectivity with each other, and therefore there is indirect connectivity to the site, the most pertinent question is whether newts would *want* to utilise the site given the number of better local opportunities. The author considers this unlikely as:

- The site does not form a land bridge between two areas of desirable habitat, such that newts would commute across it.
- The site cannot support newts on its own on account of its size; and lack of habitat.
- The site provides no features newts would use for foraging, hibernation or breeding.

4.47 As such, the site is considered to be highly undesirable for newts.

Likelihood of great crested newt presence	LOW
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Impact risk assessment

Great crested newts are typically most vulnerable to the following activities:

- Habitat loss, especially removal of dense vegetation, particularly tussocky grass and scrub.
- Clearance of hibernation features such as log / brash piles, as well as man made features such as construction debris
- Removal of trees and hedgerows with roots suitable for hibernation

- Turf stripping
- Works to waterbodies

Activity	Necessary on site?	Great crested newts likely to be affected?	Recommendations
Habitat loss	Yes	Possible	Precautionary Working Brief (PWB), seasonal avoidance measures and vegetation clearance methodology
Hibernation feature removal	No	N/a	Removal of hibernation features in active season
Tree / hedge removal	Yes	Possible	PWB, seasonal avoidance
Turf stripping	Yes	Possible	PWB, seasonal avoidance
Works to waterbodies	No	Discounted	No waterbodies on site

Surveys or licencing required?

4.48 When discussing the need for potential additional survey work or district licencing, the ecologist must consider the following:

- The likelihood of that species being affected by the development, and whether an offence would likely be committed
- Whether the results of surveying would impact the type, scope, or extent of mitigation
- The proportionality of these factors versus the expense and delay of surveying or licencing effort.

4.49 Section 99 of ODPM Circular 06/2005 states:

“It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision.”

“However, bearing in mind the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by development. Where this is the case, the survey should be completed and any necessary measures to protect the species should be in place, through conditions and / or planning obligations before permission is granted.”

4.50 The small scale of the proposals, the isolated and generally poor-quality nature of the development site, the lack of suitable breeding habitat on site, and the fact no ponds or significant waterbodies will be directly affected by the development is such that no further surveys are considered necessary. Furthermore, a neighbouring development site at The Bulrushes, Coombe Hill Road, East Grinstead (Ref: DM/24/2248), which assessed the same surrounding pond network and comparable landscape context, was

considered suitable for a Reasonable Avoidance Measures / precautionary working methods approach by NatureSpace on 10/10/2024.

4.51 The likelihood of a criminal offence being committed is considered to be nil, as:

- Newts can be protected from killing, injury, disturbance or taking through precautionary measures
- There are no places of shelter on site
- There are no breeding or resting sites on sites

4.52 In accordance with CIEEM guidance and JNCC Phase 1 methodology, the author believes that this development meets the threshold for a precautionary approach without the need for district licencing.

4.53 It is recommended however that a site-specific Precautionary Working Method Statement (PWMS) is provided prior to works commencing, to expand upon the broad recommendations contained within Section 6 of this report.

4.54 Should the LPA run the Natural England RRA in light of the information provided as a part of this report, and still conclude that an offence is “Likely”, it is the author’s professional opinion that at this time, there is no further evidence that can be offered to avoid the conclusion that a District Level Licence will need to be obtained from the local issuing body.

Future potential and compensation

4.55 The site has limited potential to support great crested newts in future, as whilst enhancement of the surrounding riparian vegetation may marginally improve overall amphibian suitability, the site itself lacks suitable breeding habitat in the form of ponds or other still-water features. As such, the future suitability of the site for great crested newts is likely to remain low. Section 6 provides further details on enhancements.

Hedgehogs

4.56 Hedgehogs are a species of principal importance under the NERC Act 2006.

4.57 Hedgehogs are also protected from capture or killing by certain methods by the Wildlife and Countryside Act 1981 (as amended).

Current usage

4.58 No signs of Hedgehogs were recorded during the survey.

Foraging, connectivity and hibernation

4.59 Hedgehogs generally require a mosaic of interconnected habitats, including woodland edges, hedgerows, grasslands, and gardens, which provide shelter, foraging opportunities, and nesting sites (Morris, 2006). They rely on dense undergrowth, leaf litter, and log piles for nesting and hibernation, as well as varied vegetation supporting a rich supply of invertebrates. While hedgerows can serve as important corridors for movement and foraging, they are less commonly used for nesting.

4.60 This diverse habitat structure is not currently provided by the site and is of sub-optimal quality due to the open featureless ruderal/grassland. Being a nocturnal species however, this could be of use to hedgehogs although they would be vulnerable to predation in daylight.

4.61 There are hibernation opportunities within the piles of brash, logs and leaf litter on site.

4.62 Hedgehog presence in the wider landscape is considered to be possible due to the areas of woodland present.

Likelihood of hedgehog presence	MODERATE
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Impact risk assessment

Hedgehogs are typically most vulnerable to the following activities:

- Habitat loss, especially removal of dense vegetation, particularly tussocky grass and scrub.
- Clearance of hibernation features such as log / brash piles and bonfires

Activity	Necessary on site?	Hedgehogs likely to be affected?	Recommendations
Habitat loss	Yes	Possible	Precautionary watching brief, seasonal avoidance measures and vegetation clearance methodology
Hibernation feature removal	No	N/a	Removal of hibernation features in active season by hand. Bonfires to be hand searched.

Surveys required?

- 4.63 No further surveys for hedgehogs are necessary as they can be adequately protected using standard mitigation measures.

Future potential and compensation

- 4.64 The site has some potential to support hedgehogs in future, as compensation and enhancement features will increase the ability of local populations to survive. Section 6 provides further details on enhancements.

Reptiles

4.65 All species of reptile are protected by the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is a criminal offence to intentionally or accidentally harm, injure or destroy reptile species or their eggs.

Current usage

4.66 No signs of reptiles were recorded during the survey.

Foraging, connectivity, basking and hibernation

4.67 The habitats on site provide limited suitability for reptiles due to the generally open and recently disturbed nature of the site. Whilst occasional areas of boundary vegetation, boundary scrub and the stream corridor may provide some temporary refuge opportunities, much of the site comprises exposed habitats with little continuous cover.

4.68 Sub-optimal hibernation habitat is limited to the roots of trees and hedgerows.

4.69 The wider landscape provides greater suitability for reptiles than the development site itself, particularly within surrounding woodland edge habitats, rough grassland and connected semi-natural vegetation corridors. However, reptile use of the site itself is considered likely to be low and transient in nature.

Likelihood of reptile presence	LOW
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Impact risk assessment

Reptiles are typically most vulnerable to the following activities:

- Habitat loss, especially removal of dense vegetation, particularly tussocky grass and scrub.
- Clearance of hibernation features such as log / brash piles, as well as man made features such as construction debris
- Removal of trees and hedgerows with roots suitable for hibernation
- Turf stripping

Activity	Necessary on site?	Reptiles likely to be affected?	Recommendations
Habitat loss	Yes	Possible	Precautionary Working Brief (PWB), seasonal avoidance measures and vegetation clearance methodology
Hibernation feature removal	No	N/a	Removal of hibernation features in active season
Tree / hedge removal	Yes	Possible	PWB, seasonal avoidance
Turf stripping	Yes	Possible	PWB, seasonal avoidance

Surveys required?

- 4.70 In accordance with CIEEM guidance and JNCC Phase 1 methodology, this meets the threshold for a precautionary approach without the need for further Phase 2 herptile survey effort.

Future potential and compensation

- 4.71 The site has limited potential to support reptiles in future, as whilst the future residential use of the site will reduce suitability in some areas, increased vegetation cover and hedgerow rejuvenation may create additional refuge and commuting opportunities for reptiles over time. Section 6 provides further details on enhancements.

5 CONCLUSION

Site summary

- 5.1 The existing habitats are typical of unmanaged semi-rural habitats of relatively low ecological value, supporting generally poor floral diversity and species assemblages indicative of suboptimal condition. The proposed development will allow for improved long-term habitat management alongside the incorporation of ecological enhancement features.
- 5.2 Most of the habitats on site were intact at the time of survey, however the centre of the site had been subject to recent cutting and clearance works. Remaining live ruderal vegetation alongside cut and dead specimens were therefore used to infer the likely species composition and classify the habitat as tall ruderal vegetation prior to management.
- 5.3 The biodiversity value of the total site area is largely attributed to the following factors:
- The generally poor species diversity and suboptimal condition of habitats present on site.
 - The open nature of the site and the poor vegetative structure and connectivity within the development boundary, including fragmented, scraggly and gappy hedgerows.
 - The sparse and recently disturbed nature of much of the vegetation on site.
 - The poor vegetative structure and connectivity within the development boundary; and
 - The ease with which biodiversity enhancement measures can be implemented within the overall site boundary without compromising amenity value.

Development proposals

- 5.4 Development plans on site comprise:
- The Development proposals on site comprise the construction of a new two-storey dwelling with associated garage, access, parking, and landscaping.

Habitat impacts

- 5.5 Impacts to non-built habitats are predicted to be minimal comprising small areas of modified grassland, tall ruderal, and scrub, with onward management of the other retained habitats in line with the landscape / proposals plan for the site.

Species likely present

- 5.6 In the absence of mitigation, the current development proposals have the potential to affect protected species. To reduce the risk of an offence being committed, recommendations are outlined in Section 6 of this report. These should be followed to

ensure that any potential impacts to protected species are adequately addressed during the planning stage, development and post-development stage.

5.7 The following species require no specific mitigation, and can be discounted from future consideration:

- Dormice

5.8 The following species require 'standard' mitigation, such that subject to application of a combination of non-site-specific measures, a precautionary approach, and toolbox talks no impacts are predicted on these species:

- Bats

- Breeding birds
- Great crested newts
- Hedgehogs
- Reptiles

5.9 The following species required additional mitigation measures, being a combination of additional surveys and / or additional site-specific mitigation measures due to the fact that the development presents unique risks to them:

- Not applicable

6 RECOMMENDATIONS

6.1 Section 6 discusses the following separate elements:

- Ecological enhancement measures recommended as part of the proposed development.
- Species specific mitigation measures for those species that would otherwise be at risk of injury, death, or legislative breach without mitigation measures

Mitigation

6.2 The quality of the habitats that could be affected and their potential to support protected and notable species is such that without mitigation, the development has the potential to harm, injure, kill or disturb protected or notable species.

6.3 These recommendations are therefore mitigative and are designed to work on a worst-case scenario basis, and to offer biodiversity enhancements to benefit the local area by attracting species in.

Species specific mitigation measures

This report provides basic and generic mitigation measures for those protected species identified as being on site and at risk of impact due to the proposed development. The following measures will be expanded upon either:

- As a whole in a Construction Environmental Management Plan (CEMP); OR
- Individually in Precautionary Working Method Statements (PWMS) for each species

One of these approaches should be attached as a condition to planning consent.

Mitigation measures outlined within this and other documents would be superseded by any specialist input provided pursuant to obtaining a Protected Species Mitigation licence from Natural England – e.g. for bats.

Bats

All of the habitats on site have the potential to support foraging and commuting bats.

There are no buildings or trees on site, trees will remain unaffected by the proposed development.

Regardless of potential bat presence, a precautionary approach to bats will be required to comprise the following outline measures:

Tree works methodology

Works to trees that could affect bats include, but are not limited to:

- Felling of trees

- Crown reduction, thinning, or lifting
- Removal of limbs or sections containing potential roosting features such as cavities, cracks, or loose bark

All such works should be undertaken using a sensitive, staged approach with sections lowered carefully where practicable and features inspected for signs of bat presence before and during works.

All trees marked for removal must be re-assessed immediately prior to works commencing by an appropriately trained and experienced ecologist.

1. Trees must be climbed in the first instance; they must not be clear-felled or worked on from ground level unless under ecological supervision.
2. All features to be non-invasively inspected by the climber for signs of bats.
3. For pruning or felling works, features are to be avoided with limbs removed in sections and lowered to the ground.
4. Arisings will be searched again on the ground before disposal.
5. In the case of removal, once the tree has been reduced to a monolith with no PRFs remaining, the monolith can be felled to ground level either through standard aerial dismantling or controlled clear felling with ropes.

If bats are found or suspected at any time or features not identified or assessed during the GLTA are discovered, work must cease, and the ecologist must be notified. Works cannot then recommence until appropriate survey and licensing effort has been undertaken.

At all times during the works

Should roosting bats be confirmed or suspected at any time all works must cease and Arborweald contacted for a second assessment. The area must be cordoned off and works halted until the appropriate survey effort has been undertaken and licencing acquired.

Bats are not to be handled by anyone not covered under a Natural England Licence *unless their actions prevent further harm to an individual at immediate risk of further harm should those actions not be undertaken.*

Failure to cease works and undertake the adequate survey and licencing effort, or disturbing, harming bats, or obstructing a roost constitutes a strict liability criminal offence. The maximum penalty is 6 months in prison and an unlimited fine.

Lighting

While different species of bat react differently to night-time lighting, research has found that bats overall are sensitive to artificial lighting. Excessive and/or poorly directed lighting may delay bats in emerging from their roosts; shortening the time available for foraging, as well as causing bats to move away from suitable foraging grounds, movement corridors or roosting sites, to alternative dark areas (Jones, 2000).

To minimise indirect impacts from lighting associated with the proposed development, it is recommended that artificial lighting is only directed where necessary for health and safety reasons. Lighting should not illuminate any trees, hedgerows or mitigation and compensation features, such as hanging tiles and integrated bat boxes, or suspected or confirmed bat

roosting sites. Lighting should only be used for the period of time for which it is required (Jones, 2000). This can be achieved by following accepted best practice (Fure, 2006; Institute of Lighting Engineers 2009; Bat Conservation Trust 2024):

- The level of artificial lighting including flood lighting should be kept to an absolute minimum;
- Where this does not conflict with health and safety and/or security requirements, the site should be kept dark during peak bat activity periods (0 to 1.5 hours after sunset and 1.5 hours before sunrise);
- Lighting required for security or safety reasons should use a lamp of no greater than 2000 lumens (150 Watts) and should comprise sensor-activated lamps;
- Lights utilising LED technology are the preferred option as these lights do not emit on the UV spectrum, are easily controllable in terms of direction/spill and can be turned on and off instantly;
- Avoid the use of sodium or metal halide lamps, these gas lamps require a lengthy period in which to turn off and the diffuse nature of the light emitted makes light spillage a significant problem.
- Lights required for night time deliveries or security patrols could be set to activate with pressure activated sensors set into the ground;
- Lighting should be directed to where it is needed to minimise light spillage. This can be achieved by limiting the height of the lighting columns and by using as steep a downward angle as possible and/or a shield/hood/cowl/ that directs the light below the horizontal plane and restricts the lit area;
- Artificial lighting should not directly illuminate any confirmed or suitable bat roosting features or habitats of value to commuting/foraging bats. Similarly, any newly planted linear features or compensatory bat roosting features should not be directly lit.

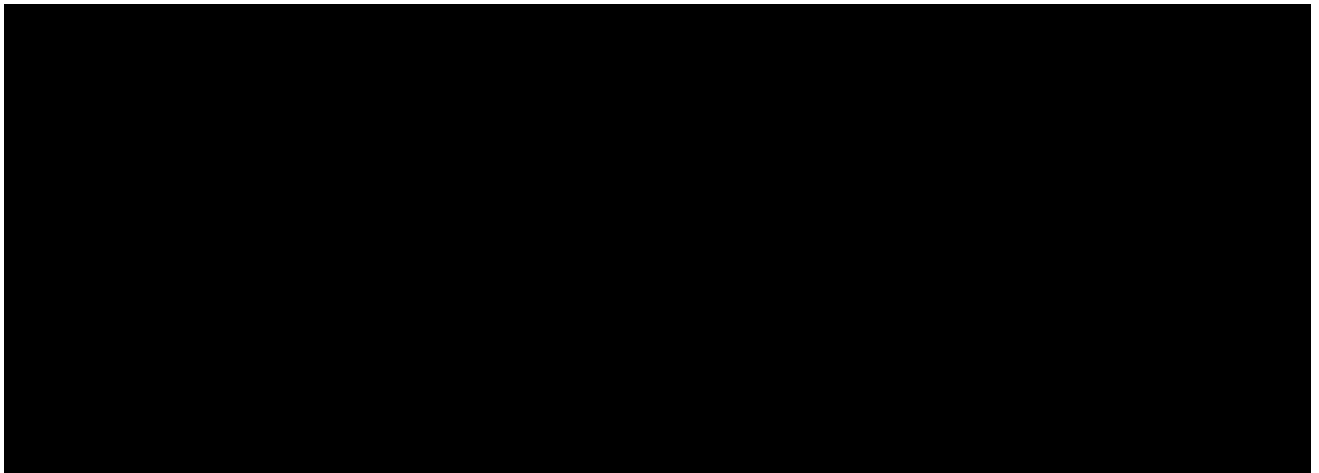
Breeding birds

The scattered trees and hedgerows on site have the potential to support breeding birds. This also applies to trees that hang over into the site such as those at the boundaries.

All tree and hedge cutting works should be confined to outside of the bird breeding season (February – October inclusive) or should be undertaken under ecological supervision where works are undertaken within nesting season.

If an active nest is found all works must cease and a suitably experienced, qualified (and where necessary, licenced) ecologist contacted. Works can only resume once the species of bird has been identified, and an adequate buffer zone erected around the nest suitable to the species affected. This buffer must remain in place until fledging of the chicks *and* confirmation of the nest becoming defunct by the site ecologist.

No further surveys for breeding birds are deemed necessary at this stage.



Herptiles

Necessity for phase 2 surveying

Further herptile surveys are not considered necessary due to the site's generally low suitability, associated with its open and recently disturbed nature, limited refugia density, ongoing disturbance, and poor connectivity with surrounding habitats. Furthermore, no confirmed great crested newt records are associated with the nearest waterbodies to the site, and the nearby ponds assessed during this report were found to be of poor or otherwise suboptimal suitability for great crested newts. In accordance with CIEEM guidance and JNCC Phase 1 methodology, this meets the threshold for a precautionary approach without the need for further Phase 2 herptile survey effort.

Their presence would likely be 'vagrant' as a part of normal foraging, with the site being unable to support a population of any herptile species on its own.

Both great crested newts and reptiles can be successfully protected by a precautionary approach comprising mitigation measures informed by a site-specific toolbox talk such as sensitive vegetation clearance, and informal translocation.

The term 'informal translocation' refers solely to **manual encouragement of non-licensable species** from the work area and does not imply handling of licensable species unless authorised under licence.

Herptile season

Hibernation season for herptiles comprises the coldest and darkest months in which they enter a state of torpor due to the lack of sunlight hours and opportunities to warm themselves and become active. Whilst there is no specific definition of the months that herptiles hibernate due to climatic variability and species differences, it is generally accepted that herptiles are hibernating in November, December, January and February, with some limited activity in October and March, increasing as daytime temperatures increase.

Active season comprises the warmest months of the year, and are generally accepted to be April, May, June, July, August, and September, with some activity expected in warmer periods of March and October. Additional consideration should be given to amphibian **breeding season** which occurs in the period March to June inclusive subject to weather conditions.

Capture and translocation of herptiles

Species identification

Identification of the target species for translocation is extremely important so as to manage risks to both the captor and the target individual.

Can be captured and translocated	Must not be captured	Reason
Common frog	Great crested newt	Protected species
Common toad	Sand lizard	Protected species
Smooth newt	Smooth snake	Protected species
Palmate newt	Adder	Venomous
Common lizard		
Grass snake		
Slow worm		

If in doubt regarding the species, stop works and contact an appropriately trained, experienced and where necessary licenced ecologist.

General notes

Mitigation measures for amphibians such as great crested newts and common toads are similar to those for reptiles such as common lizards and slow worms. Where they differ is in their speed of movement, and their level of protection, as well as some differences in habitat.

Broadly all species are found within similar dense habitats such as tussocky grass, scrub, and occasionally woodland, making use of dense woody features for cover. Amphibians are more often found near water, although newts are broadly terrestrial having only a brief aquatic period in March to June.

When organising mitigation, there are a few salient points to remember:

- Capturing or excluding a great crested newt without a licence is an offence, *unless rescuing the newt was an emergency measure that would otherwise negate the risk of a more serious offence being committed*. This includes restricting newts to a fenced area.
- All herptiles hibernate in the same sorts of habitats, being natural log and brash piles, holes in the ground, and man-made features such as construction waste and bonfires.
- All herptiles hibernate at roughly the same time (the winter months) and are active in the warmer months.
- Reptiles broadly move faster than amphibians and are more capable of fleeing activities such as vegetation clearance. As such, amphibians are most vulnerable to destructive activities.

Mitigation measures

Due to the methods that will be employed to create footings and other hard features, it will be necessary for the works to be mitigated through seasonal avoidance measures and a precautionary approach.

The precautionary approach laid out below should be followed to ensure that in the event that vagrant reptiles are discovered appropriate mitigation measures are put in place to avoid the risk of an offence being committed, and so that construction workers are aware of the constraints that herptile species could present to the development.

At a glance:

- Assessment of the working area by a qualified and experienced ecologist
- Toolbox talk to inform operatives
- Fence installation as necessary
- Formal translocation effort if required
- Seasonal constraints applied as necessary
- Timed vegetation clearance with informal translocation of stragglers / encouragement towards safe habitat outside of working area
- Maintenance of site
- Works commence under precautionary approach once site has been made safe for herptiles

Toolbox talk

Prior to works commencing, a toolbox talk will be presented to all operatives to inform them of the following:

- The legislation protecting herptile species
- The importance of their conservation
- How to identify them so as to prevent injury
- The site-specific risks to them
- What to do in the event a herptile is discovered or suspected
- Who to contact in the event a herptile is discovered
- How to identify areas with herptiles, including signage provisions
- Logging of herptile incidents

Fencing

No exclusion fencing will be installed unless a European Protected Species licence has been granted by Natural England. This is to avoid the risk of unlawfully trapping or excluding GCN. For reptiles, short sections of drift fencing may be used temporarily to guide animals away during vegetation clearance, but not for exclusion

Translocation

Under the current scheme, herptiles will be encouraged to disperse from the site naturally through phased vegetation removal. Active translocation will only be carried out for species not subject to licensing constraints from the 'Can be captured' table above.

If there is any doubt as to the species present, works must cease and an appropriately trained and licenced ecologist contacted, as capturing a great crested newt would constitute an offence. Natural England will need to be consulted.

So as to reduce the risk of an offence being committed, Natural England's guidance should be followed as outlined in the Reptile Mitigation Guidelines handbook, such that herptiles are captured and excluded from the work area and relocated to the adjacent receptor site within the ownership boundary that will be subject to restoration and enhancement.

Timing of works

At a glance

- All works under ecological supervision
- Construct a compensatory feature for displaced herptiles
- Cut vegetation to ground level during the active season
- Maintain at this level until winter / until supervision is available
- Strip turf and topsoil during winter / under ecological supervision

Prior to works commencing

A hibernaculum or log pile should be constructed within the habitat unaffected by the development / offsite to provide a translocation receptor site should herptiles be discovered.

Vegetation removal

Vegetation removal should occur during the active season of March to October, to include removal of any scrub plants and phased cutting of all vegetation to ground level.

The entire working area should be checked by the ecologist prior to works commencing, including a hand search where necessary of any dense refugia.

Vegetation cutting works should be undertaken in a staged manner consisting of cut and collect to 150mm, left for 24 hours, then final cut and collect to ground level. This will also reduce the risk to breeding birds.

Hibernacula removal

Any hibernation features such as rubble or spoil piles, bonfires, or dense refugia such as log or brash piles should be slowly dismantled by hand during the active season of March to October only.

Maintenance of the site

Once any areas of vegetation to be affected by the development have been cut to ground level, it should be maintained as such until work operations can begin so as to keep the site as unsuitable for habitation by herptiles as possible.

The site should be cut every two weeks to discourage re-colonisation. All materials or spoil should be kept off the ground to prevent usage as hibernacula or cover.

Turf stripping

Prior to turf stripping (no more than 5 days before work start), a site walkover should be undertaken to ensure no new refugia have formed.

Turf stripping must only be undertaken once all herptiles have either been excluded from the works area (in the case of fully fenced sites), or once herptiles have been encouraged away from the site through phased vegetation clearance and the site has been maintained at ground level until turf stripping can begin.

Turf stripping during the hibernation season of November to February is only possible if the site has been maintained at ground level, and no hibernation features will be affected – this is at the sole discretion of the ecologist. If this cannot be guaranteed, turf stripping works must occur under ecological supervision during the active season.

In the unlikely event that herptiles are found at any time during the development, work should cease immediately, and an ecologist – suitably licenced where necessary - should be sought. Thereafter work can only recommence upon working in accordance with legislatively compliant recommendations. Failure to do so constitutes a criminal offence.

Biodiversity enhancement and compensation

Necessity for planning conditions – note to the LPA

Sometimes it can be deemed necessary for biodiversity enhancements and compensation measures to be recommended to be designated as conditions attached to a planning consent.

The following symbols will be utilised below, with categorisation methodology explained in Section 2:

Red recommendations should be designated as conditions attached to a planning consent, and the development must not proceed without these enhancements / compensation measures being put in place, as they form a crucial role in achieving biodiversity net gain targets.

Amber recommendations should be included within the development, however it is not necessary for them to be designated as conditions, as the author believes that their implementation is not key to achieving biodiversity net gain targets. The client / developer should seriously consider including these measures to improve the biodiversity value of the site and to reduce their carbon footprint.

Green recommendations are additional enhancements which would improve the biodiversity value of the site; however, they are not key to achieving biodiversity net gain targets. These recommendations are aimed at clients wishing to 'go the extra mile' with their site so as to improve visual impact, public engagement, and property value.

In all cases, effort should mainly be concentrated on planting native species where possible. We have created an 'Alternative Planting List' covering trees, hedgerows, and wildflower species suggestions, available on request.

Mandatory enhancements

Hedgehog highways should be a part of the development, with any and all new fencing and walls having a minimum 13cm x 13cm hole integrated into their design to allow access and egress from the site. Hedgehogs are a species of principal importance under Section 41 of the NERC Act 2006, and their conservation is of paramount importance due to severe declines in their populations and range.

Bird boxes, bat boxes, and bee bricks

Wildlife boxes should be a part of the development, including dedicated swift boxes for hirundines, multi species bird boxes, and bat boxes.

Arborweald receive no commission for recommendation of brands of wildlife boxes, and other brands are available.

Bird boxes

In all cases

Bird boxes should be placed at a minimum height of 4.5 metres *i.e. first floor / eaves height* away from doors and windows and areas of high disturbance (footpaths, lighting etc.) on either the eastern or western aspect. This allows the boxes to warm during the day without risk of chicks overheating on the southern aspect.

Multi-species bird boxes and swift boxes should be placed away from each other where possible.

Trees

Bird boxes should be placed on trees so that they remain partially shaded during parts of the day to reduce the risk of overheating. Branches should be carefully trimmed to provide a clear flight path to the entrance hole(s). Care should be taken to ensure the tree is not damaged during erection, and that the tree chosen is of a suitable size and age to support a box for at least 10 years.

Buildings

Bird boxes should be placed on buildings so that they remain partially shaded during parts of the day to reduce the risk of overheating. They should comprise built-in features as they are better for security, longevity, reduced maintenance, reduced predation, thermal stability and aesthetic integration with the building design.

Type and construction

It is recommended that bird boxes are constructed of woodcrete / woodstone similar to such boxes as the Schwegler 1SP nest box, which is suitable for both built-in and hung installations.

The swift box should be similar to the Vivara Pro WoodStone built-in swift nest box, or the Schwegler 17A triple cavity box, which is suitable for both built-in and hung installations.

One brick is the equivalent of one nesting cavity, thereby where a multiple cavity brick is provided, this would result in the same provision but with a lower number of bricks.

Provision and location

As a minimum, a single (1) bird box should be provided along with a minimum three (3) swift cavities / swift boxes / bricks on the eastern aspect of each new building / the retained building(s) / a retained mature tree in the wider ownership boundary

Bat boxes

In all cases

As bats prefer more sheltered and less disturbed areas to roost, it is recommended that bat boxes are placed at a height of 4 metres on the southern side of the structure or tree. This will ensure that bats remain undisturbed.

Trees

Care should be taken when erecting bat boxes to ensure they remain sheltered, but accessible with clear flight paths and without damaging surrounding trees during erection. Tertiary branches that block the flight path to the box should be trimmed, with the whole area remaining unlit.

Buildings

Care should be taken when erecting bat boxes to ensure they remain sheltered and are not exposed to light either directly through illumination or from large windows. Facilitation pruning of nearby trees may be necessary (see above) to provide a clear flight path.

Type and construction

It is recommended that bat boxes are of the Schwegler 1FR built-in type, as built in features have a higher efficacy than hanging features. Alternatively, where this is not possible due to a lack of suitable opportunities for built-in features, hanging boxes can be utilised such as the Schwegler 1FF or 2F flat hanging box on either buildings or mature retained trees.

Provision and location

As a minimum, a single (1) bat box / bat brick should be provided on the southern aspect of the new. Where built in boxes are not possible, two (2) hanging boxes should be provided instead.

Bee bricks

In all cases

Bee bricks should be included on the new building to comprise one (1) Ibstock EcoHabitat brick at a minimum of 1m above ground level adjacent to landscape planting that is of benefit to wildlife, comprising native species as detailed in the 'Wildflower planting' section below.

For buildings without a suitable brick face for installation, a Woodstone Insect Block or similar should be installed externally in a suitable location such as on a fence post.

Provision and location

As a minimum, a single (1) bee brick should be provided on the southern aspect of the new building.

Habitat enhancement:

The proposed development will incorporate a range of ecological enhancement measures focused on strengthening the retained habitats on site, particularly the northern stream corridor and associated boundary vegetation. Whilst the site is currently of relatively low ecological value overall, opportunities exist to improve habitat structure, connectivity and species diversity through sensitive long-term management.

On-site

Riparian enhancement

Retention of an undeveloped 10m buffer adjacent to the northern stream corridor, to remain free from built development, intensive landscaping and regular disturbance. The buffer should be managed sensitively through reduced mowing, retention of rough marginal vegetation and supplementary riparian planting where appropriate.

Enhancement of the northern riparian corridor through reduced mowing frequency, retention of marginal vegetation and supplementary damp-margin planting using species suitable for shaded riparian conditions, including meadowsweet *Filipendula ulmaria*, soft rush *Juncus effusus*, purple loosestrife *Lythrum salicaria*, *Astilbe* spp. and *Hosta* spp.

Retention and enhancement of the stream-side vegetation buffer to encourage development of a more structurally diverse tall herb and rough grassland assemblage.

Creation and retention of log piles and deadwood habitat within retained vegetated areas where practical.

Hedgerow enhancement

Enhancement and rejuvenation of retained hedgerows through bolster planting with native species to reduce gaps and improve habitat connectivity.

Selective management of ornamental vegetation where feasible to encourage development of a more diverse native understorey.

Enhancement proposals broadly align with recommendations made within the accompanying BS5837 Arboricultural Impact Assessment, particularly regarding enhancement planting adjacent to the retained northern tree corridor and replacement of fragmented hedgerow sections with species-rich native planting

Native species

The development should include new hedge planting along linear boundaries using a native species-rich hedgerow mix to include a minimum of 7 species from the following list (non-native species should be avoided):

- Hazel *Corylus avellana*
- hawthorn *Crataegus monogyna*
- blackthorn *Prunus spinosa*
- spindle *Euonymus europaea*

- wayfaring tree *Viburnum lantana*
- crab apple *Malus sylvestris*
- hornbeam *Carpinus betulus*
- dog rose *Rosa canina*
- field maple *Acer campestre*
- wych elm *Ulmus glabra*

These species are hardy allowing them to be managed in multiple ways and provide excellent privacy once full grown.

Additionally, honeysuckle *Lonicera periclymenum* should be included in hedgerow mixes.

Bolster planting

Furthermore, any existing hedgerows in the wider site boundary should be gap planted and bolstered with species from the list above.

Privacy requirements

If further privacy is required in specific areas, then yew *Taxus baccata* and beech *Fagus sylvatica* should be considered.

Non-native species

Areas of hedgerow with non-native invasive species should have these species removed and replaced with native species.

Planting density

New hedgerows should be planted at a density of 10 plants per metre in two rows of 5 plants each, with rows 30cm apart and plants 20cm apart. Bolster planting should be undertaken at the same density taking into account existing mature individuals as contributing to this density; e.g. existing hedgerow has density of 3 plants per metre, bolster planting would comprise 7 additional plants.

Non-mandatory enhancements

New trees

Benefit

The development should include new trees to ensure an appropriate level of cover for bats and to provide a micro-climate between trees to support insect species. Fruit trees also work well within linear boundaries such as hedgerows.

Native species

These should be scattered throughout the site boundary, and comprise robust native woody species such as:

- hornbeam *Carpinus betulus*
- field maple *Acer campestre*
- lime *Tilia cordata* var. 'Green spire'
- pear *Pyrus spp.*,
- apple *Malus spp.*,
- mountain ash *Sorbus aucuparia*.

These could include historically important varieties rare in the county. These species provide foraging opportunities for [REDACTED], birds and small mammals. They are also hardy, low maintenance and do not risk dominating the landscape in later life as they can be coppiced or pollarded effectively.

Sward management around planted trees should be careful to avoid damage to trees and should be as varied as the rest of the amenity grassland within the wider site boundary.

Hedge planting

Mowing regime

Areas of grassland on site should be mown on a scheme that benefits both biodiversity and the usage of the site. Areas away from roadways should be left long and cut once in October to allow the soil nutrients to be removed. These measures can also be supplemented for 'planting of a wildflower meadow' below.

Hedge cutting

Existing and new hedgerows on site should be cut biannually (every 2 years) except around gateways (annually). Hedgerows gradually lose their shape and density at the cost of amenity and functionality as they mature; therefore, hedge laying in the traditional Kent or Sussex style should occur every 10 years on rotation to maintain hedge structure.

Planting of a wildflower meadow

Benefits

An increase in invertebrate habitat should be a key part of the plan, to include wildflower planting for bees and other pollinators within the site boundary to help increase the number of foraging opportunities available for bats.

Specification

Wildflower meadow mixes are available online, and should preferably focus on native bee-friendly mixtures to include the following species:

Common agrimony	Cornflower	Wild marjoram
Borage	Ox-eye daisy	Meadow cranesbill
Wild clary	Wild foxglove	Musk mallow
Red clover	Common knapweed	Common poppy
White clover	Greater knapweed	Ragged robin
Corn cockle	Purple loosestrife	Sainfoin
Field scabious	Bird's-foot trefoil	Yarrow

Wildflower mixes should focus on supporting invertebrates (such as bees, ants, wasps, butterflies and flies) and birds and should ideally not contain non-native species as these can out-compete native plants for pollination.

Climbing plants

These should be trained up the walls of the new buildings or fences using trellis. Species could include; passion flower, honeysuckle, hops, ivy, star jasmine, wisteria, climbing roses, or clematis. These species all provide feeding opportunities for invertebrates and small mammals, and nesting opportunities for birds once they reach maturity.

Butterfly planting

Additional planting should focus on species rare in Sussex and Kent such as the silver-spotted skipper *Hesperia comma*, dingy skipper *Erynnis tages*, grizzled skipper *Pyrgus malvae*, Adonis blue *Polyommatus bellargus*, chalk hill blue *Polyommatus coridon*, small heath *Coenonympha pamphilus*, and fiery clear wing *Pyropteron chrysidiformus*. Plant species to encourage these butterflies should include the following in a large planter or area of ornamental planting (species that support more than one of these butterfly species are in bold):

Common sorrel	Tormentil	Birds foot trefoil
Curled dock	Salad burnet	Horseshoe vetch
Sheep's fescue	Agrimony	Wild strawberry

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FIGURES

Figure 1.1 Location of site

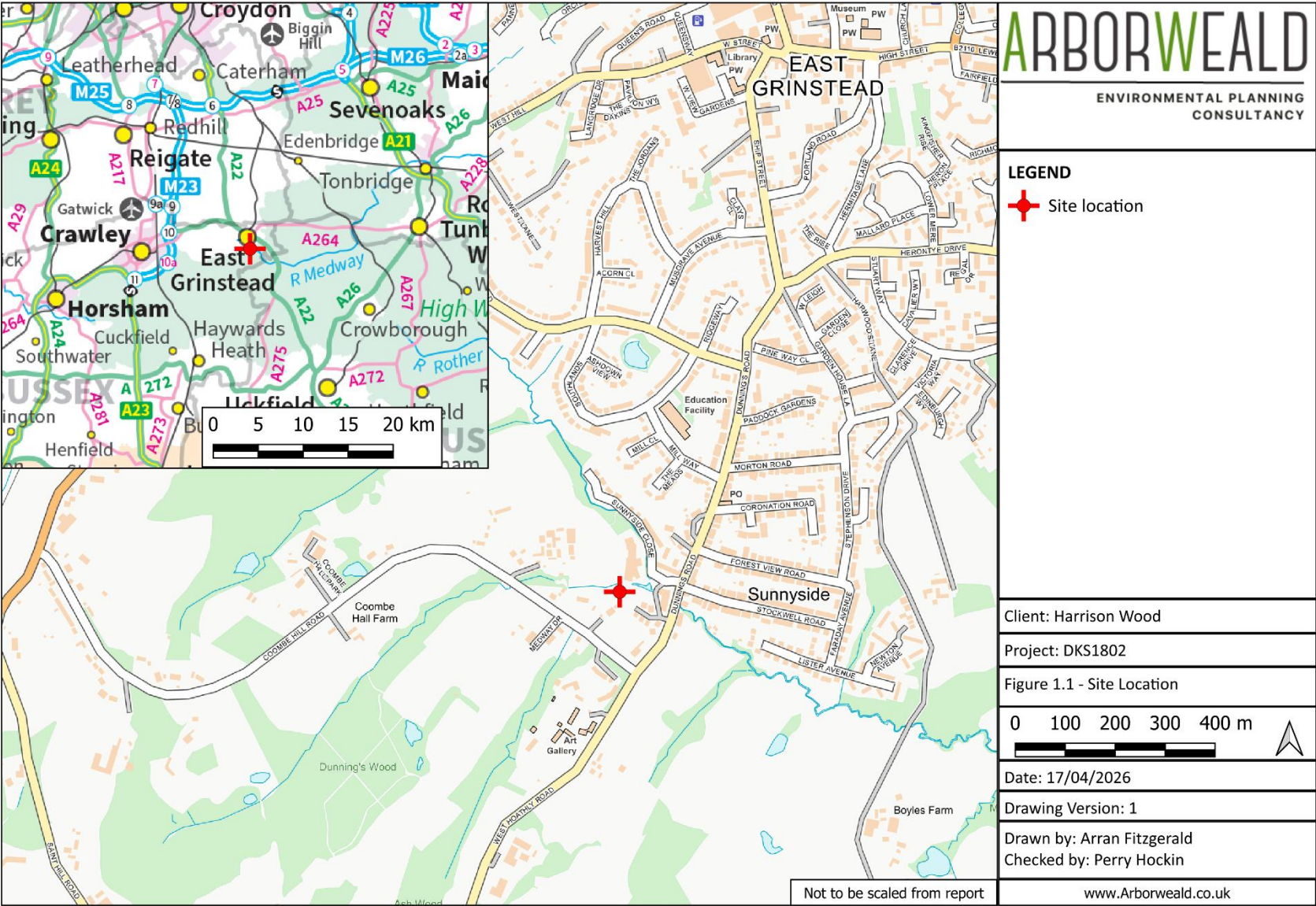
Figure 1.2 Extent of site boundary

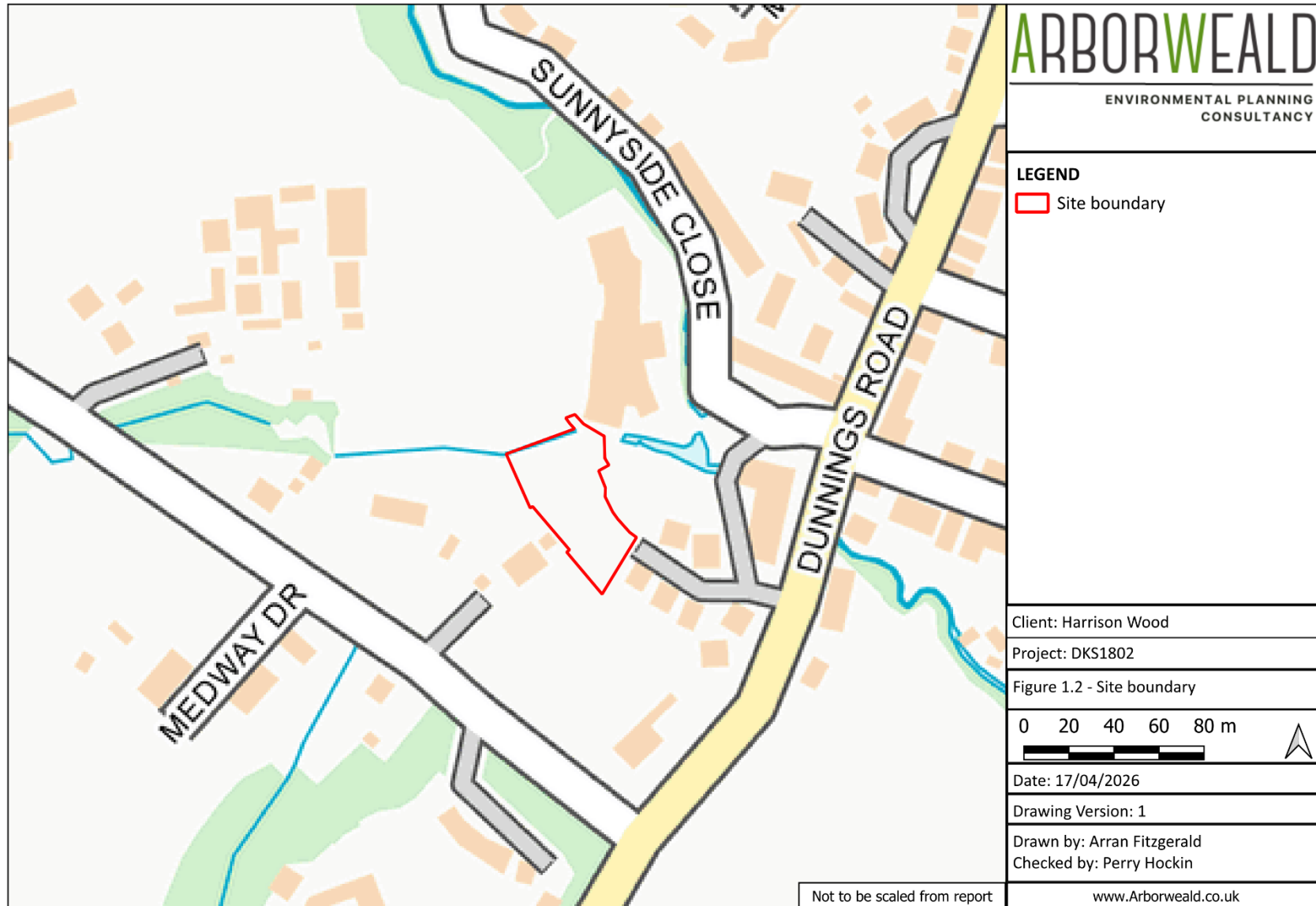
Figure 3.1 Waterbodies within 500 m of site boundary

Figure 3.2 Preliminary Ecological Appraisal results

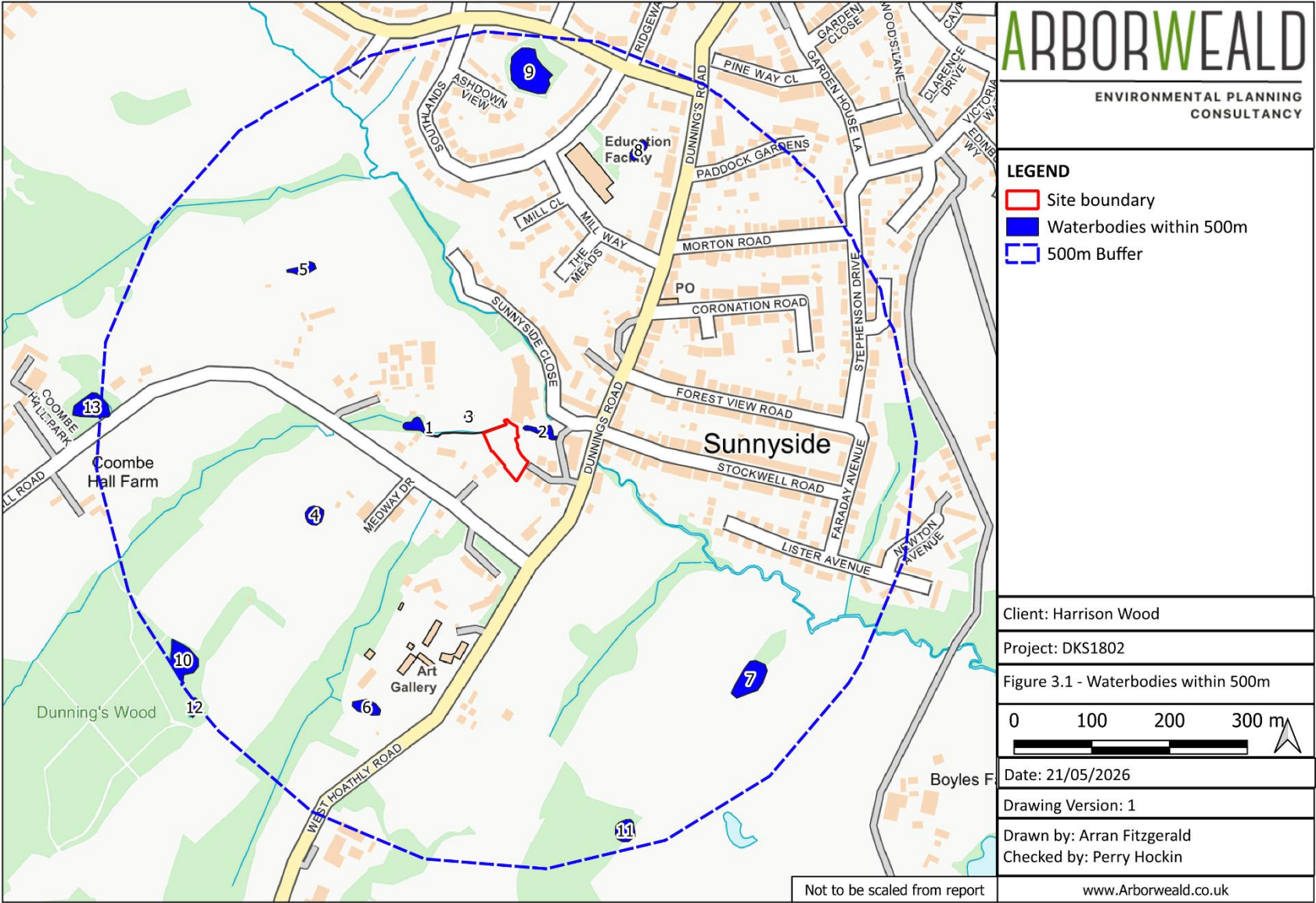
*For the purposes of the proposals drawing, habitats from any landscape plans have been assigned their category of best fit as per Stace et al.

In the absence of full and finalised development plans, the author will have to make assumptions. As such, habitats displayed are suggestions and comprise habitats that the author feels would best fit the proposed landscape without compromising the usage of the site.

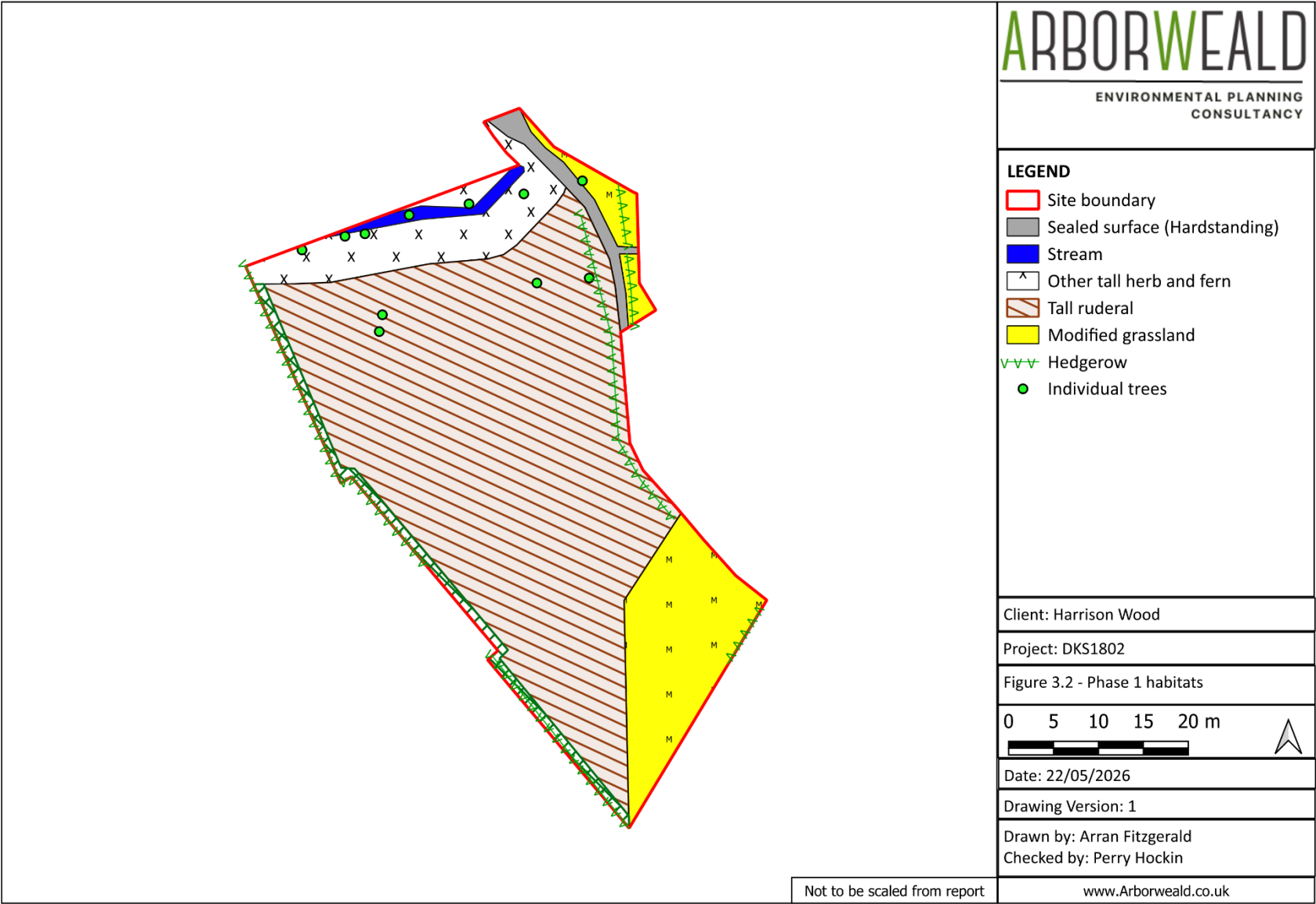




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APPENDIX A Wildlife Legislation

Strict Liability vs Mens Rea

Wildlife offences are classified in one of two ways;

Some are *strict liability*, meaning that a person can be found guilty regardless of intent or knowledge. In strict liability cases, the defendant cannot argue lack of knowledge as a defence (e.g., not knowing a bird was protected). However, statutory defences may apply (e.g., under Section 4 for acts done for humane reasons).

Other offences require intention, recklessness, or knowledge, and are governed under *Mens-rea* law whereby the offence must be proven to have been committed intentionally, through recklessness (such as not seeking prior knowledge), or when already in possession of that knowledge e.g. *having had a toolbox talk prior to undertaking works*.

The following table outlines which wildlife offences are Strict Liability, and which are Mens-rea.

Species	Primary protection legislation	Liability
Bats	Wildlife and Countryside Act 1981 (WCA 1981) – Schedule 5 Conservation of Habitats and Species Regulations 2017 (Habitats Regulations)	Strict liability - WCA 1981 – <i>Section 9(1)</i>: Prohibits killing, injuring, or taking bats. - Habitats Regulations – <i>Regulation 43(1)</i>: Prohibits deliberate capture, killing, or disturbance of bats.
		Mens-rea - WCA 1981 – <i>Section 9(4)</i>: Prohibits damage to or destruction of a bat’s place of shelter but requires intent or recklessness. - Habitats Regulations – <i>Regulation 43(2)</i>: Prohibits damage to or destruction of breeding sites or resting places, requiring intent or recklessness.
Birds	Wildlife and Countryside Act 1981 – Section 1	Strict liability <i>Section 1(1)</i>: Prohibits killing, injuring, or taking any wild bird. <i>Section 1(2)</i>: Prohibits taking, damaging, or destroying an active nest. <i>Section 1(3)</i>: Prohibits taking or destroying eggs.
		Mens-rea <i>Section 1(5)</i>: Prohibits disturbing birds at nest sites (for Schedule 1 birds), requiring intent or recklessness.
Dormice	Wildlife and Countryside Act 1981 (WCA 1981) – Schedule 5 Conservation of Habitats and Species Regulations 2017 (Habitats Regulations)	Strict liability - WCA 1981 – <i>Section 9(1)</i>: Prohibits killing, injuring, or taking a dormouse. - Habitats Regulations – <i>Regulation 43(1)</i>: Prohibits deliberate capture, killing, or disturbance.
		Mens-rea - WCA 1981 – <i>Section 9(4)</i>: Prohibits damaging or destroying a place of shelter (intent or recklessness required). - Habitats Regulations – <i>Regulation 43(2)</i>: Prohibits destruction of breeding/resting sites (intent or recklessness required).
Great-crested newts	Wildlife and Countryside Act 1981 (WCA 1981) – Schedule 5 Conservation of Habitats and Species Regulations 2017 (Habitats Regulations)	Strict liability - WCA 1981 – <i>Section 9(1)</i>: Prohibits killing, injuring, or taking a dormouse. - Habitats Regulations – <i>Regulation 43(1)</i>: Prohibits deliberate capture, killing, or disturbance.
		Mens-rea - WCA 1981 – <i>Section 9(4)</i>: Prohibits damaging or destroying a place of shelter (intent or recklessness required). - Habitats Regulations – <i>Regulation 43(2)</i>: Prohibits destruction of breeding/resting sites (intent or recklessness required).
Reptiles	Wildlife and Countryside Act 1981 – Schedule 5	Strict liability WCA 1981 – <i>Section 9(1)</i>: Prohibits killing, injuring, or taking a protected reptile (e.g., sand lizard, smooth snake).
		Mens-rea WCA 1981 – <i>Section 9(4)</i>: Prohibits damaging or destroying a place of shelter (intent or recklessness required).
Invasive species	Wildlife and Countryside Act 1981 (WCA 1981) – Section 14, Schedule 9	Strict liability WCA 1981 – <i>Section 14</i>: Prohibits the release or escape of invasive non-native species (e.g., Japanese knotweed, grey squirrel)
		Mens-rea WCA 1981 – <i>Section 14</i>: Prohibits causing the spread of invasive non-native species (e.g., Japanese knotweed, grey squirrel)
Other species	Wildlife and Countryside Act 1981 (WCA 1981) – Schedule 5 Conservation of Habitats and Species Regulations 2017 (Habitats Regulations)	Also covered under Section 9 of the WCA 1981 are otter, water vole, red squirrel, pine marten, sturgeon, lamprey, and certain invertebrates. For all these species, they are protected as follows: Strict liability WCA 1981 – Section 9(1): Prohibits killing, injuring, or taking a protected reptile (e.g., sand lizard, smooth snake).
		Mens-rea WCA 1981 – Section 9(4): Prohibits damaging or destroying a place of shelter (intent or recklessness required).

Schedule 8

Specific species of plants listed in Schedule 8 are protected. It is an offence: to intentionally pick, uproot or destroy a wild plant listed in Schedule 8.

Schedule 9

Invasive non-native species are listed under Schedule 9. It is an offence:

- to plant or otherwise cause to grow in the wild.
- If soils are contaminated by invasive non-native plant species it becomes classified as '*controlled waste*' under the Environmental Protection Act 1990 (England, Wales & Scotland), and must be disposed of accordingly.

APPENDIX B Site photographs

			
Figure B1	View east across site from north-western boundary	Figure B2	View south from north, showing recently cut vegetation.
			
Figure B3	Northwest corner of site showing Ivy covered trees.	Figure B4	Stream along northern boundary

APPENDIX C Species habitat suitability criteria

For the purposes of this report, Arborweald have developed habitat suitability criteria for protected species where specific categorisation methodology is not provided by the generally accepted literature (such as for bats or great crested newts).

HSI results on waterbody 3

SL ₁	SL ₂	SL ₃	SL ₄	SL ₅	SL ₆	SL ₇	SL ₈	SL ₉	SL ₁₀	SL ₁₁	SL ₁₂	SL ₁₃	SL ₁₄	SL ₁₅	SL ₁₆	SL ₁₇	SL ₁₈	SL ₁₉	SL ₂₀	SL ₂₁	SL ₂₂	SL ₂₃	SL ₂₄	SL ₂₅	SL ₂₆	SL ₂₇	SL ₂₈	SL ₂₉	SL ₃₀	SL ₃₁	SL ₃₂	SL ₃₃	SL ₃₄	SL ₃₅	SL ₃₆	SL ₃₇	SL ₃₈	SL ₃₉	SL ₄₀	SL ₄₁	SL ₄₂	SL ₄₃	SL ₄₄	SL ₄₅	SL ₄₆	SL ₄₇	SL ₄₈	SL ₄₉	SL ₅₀	SL ₅₁	SL ₅₂	SL ₅₃	SL ₅₄	SL ₅₅	SL ₅₆	SL ₅₇	SL ₅₈	SL ₅₉	SL ₆₀	SL ₆₁	SL ₆₂	SL ₆₃	SL ₆₄	SL ₆₅	SL ₆₆	SL ₆₇	SL ₆₈	SL ₆₉	SL ₇₀	SL ₇₁	SL ₇₂	SL ₇₃	SL ₇₄	SL ₇₅	SL ₇₆	SL ₇₇	SL ₇₈	SL ₇₉	SL ₈₀	SL ₈₁	SL ₈₂	SL ₈₃	SL ₈₄	SL ₈₅	SL ₈₆	SL ₈₇	SL ₈₈	SL ₈₉	SL ₉₀	SL ₉₁	SL ₉₂	SL ₉₃	SL ₉₄	SL ₉₅	SL ₉₆	SL ₉₇	SL ₉₈	SL ₉₉	SL ₁₀₀	SL ₁₀₁	SL ₁₀₂	SL ₁₀₃	SL ₁₀₄	SL ₁₀₅	SL ₁₀₆	SL ₁₀₇	SL ₁₀₈	SL ₁₀₉	SL ₁₁₀	SL ₁₁₁	SL ₁₁₂	SL ₁₁₃	SL ₁₁₄	SL ₁₁₅	SL ₁₁₆	SL ₁₁₇	SL ₁₁₈	SL ₁₁₉	SL ₁₂₀	SL ₁₂₁	SL ₁₂₂	SL ₁₂₃	SL ₁₂₄	SL ₁₂₅	SL ₁₂₆	SL ₁₂₇	SL ₁₂₈	SL ₁₂₉	SL ₁₃₀	SL ₁₃₁	SL ₁₃₂	SL ₁₃₃	SL ₁₃₄	SL ₁₃₅	SL ₁₃₆	SL ₁₃₇	SL ₁₃₈	SL ₁₃₉	SL ₁₄₀	SL ₁₄₁	SL ₁₄₂	SL ₁₄₃	SL ₁₄₄	SL ₁₄₅	SL ₁₄₆	SL ₁₄₇	SL ₁₄₈	SL ₁₄₉	SL ₁₅₀	SL ₁₅₁	SL ₁₅₂	SL ₁₅₃	SL ₁₅₄	SL ₁₅₅	SL ₁₅₆	SL ₁₅₇	SL ₁₅₈	SL ₁₅₉	SL ₁₆₀	SL ₁₆₁	SL ₁₆₂	SL ₁₆₃	SL ₁₆₄	SL ₁₆₅	SL ₁₆₆	SL ₁₆₇	SL ₁₆₈	SL ₁₆₉	SL ₁₇₀	SL ₁₇₁	SL ₁₇₂	SL ₁₇₃	SL ₁₇₄	SL ₁₇₅	SL ₁₇₆	SL ₁₇₇	SL ₁₇₈	SL ₁₇₉	SL ₁₈₀	SL ₁₈₁	SL ₁₈₂	SL ₁₈₃	SL ₁₈₄	SL ₁₈₅	SL ₁₈₆	SL ₁₈₇	SL ₁₈₈	SL ₁₈₉	SL ₁₉₀	SL ₁₉₁	SL ₁₉₂	SL ₁₉₃	SL ₁₉₄	SL ₁₉₅	SL ₁₉₆	SL ₁₉₇	SL ₁₉₈	SL ₁₉₉	SL ₂₀₀	SL ₂₀₁	SL ₂₀₂	SL ₂₀₃	SL ₂₀₄	SL ₂₀₅	SL ₂₀₆	SL ₂₀₇	SL ₂₀₈	SL ₂₀₉	SL ₂₁₀	SL ₂₁₁	SL ₂₁₂	SL ₂₁₃	SL ₂₁₄	SL ₂₁₅	SL ₂₁₆	SL ₂₁₇	SL ₂₁₈	SL ₂₁₉	SL ₂₂₀	SL ₂₂₁	SL ₂₂₂	SL ₂₂₃	SL ₂₂₄	SL ₂₂₅	SL ₂₂₆	SL ₂₂₇	SL ₂₂₈	SL ₂₂₉	SL ₂₃₀	SL ₂₃₁	SL ₂₃₂	SL ₂₃₃	SL ₂₃₄	SL ₂₃₅	SL ₂₃₆	SL ₂₃₇	SL ₂₃₈	SL ₂₃₉	SL ₂₄₀	SL ₂₄₁	SL ₂₄₂	SL ₂₄₃	SL ₂₄₄	SL ₂₄₅	SL ₂₄₆	SL ₂₄₇	SL ₂₄₈	SL ₂₄₉	SL ₂₅₀	SL ₂₅₁	SL ₂₅₂	SL ₂₅₃	SL ₂₅₄	SL ₂₅₅	SL ₂₅₆	SL ₂₅₇	SL ₂₅₈	SL ₂₅₉	SL ₂₆₀	SL ₂₆₁	SL ₂₆₂	SL ₂₆₃	SL ₂₆₄	SL ₂₆₅	SL ₂₆₆	SL ₂₆₇	SL ₂₆₈	SL ₂₆₉	SL ₂₇₀	SL ₂₇₁	SL ₂₇₂	SL ₂₇₃	SL ₂₇₄	SL ₂₇₅	SL ₂₇₆	SL ₂₇₇	SL ₂₇₈	SL ₂₇₉	SL ₂₈₀	SL ₂₈₁	SL ₂₈₂	SL ₂₈₃	SL ₂₈₄	SL ₂₈₅	SL ₂₈₆	SL ₂₈₇	SL ₂₈₈	SL ₂₈₉	SL ₂₉₀	SL ₂₉₁	SL ₂₉₂	SL ₂₉₃	SL ₂₉₄	SL ₂₉₅	SL ₂₉₆	SL ₂₉₇	SL ₂₉₈	SL ₂₉₉	SL ₃₀₀	SL ₃₀₁	SL ₃₀₂	SL ₃₀₃	SL ₃₀₄	SL ₃₀₅	SL ₃₀₆	SL ₃₀₇	SL ₃₀₈	SL ₃₀₉	SL ₃₁₀	SL ₃₁₁	SL ₃₁₂	SL ₃₁₃	SL ₃₁₄	SL ₃₁₅	SL ₃₁₆	SL ₃₁₇	SL ₃₁₈	SL ₃₁₉	SL ₃₂₀	SL ₃₂₁	SL ₃₂₂	SL ₃₂₃	SL ₃₂₄	SL ₃₂₅	SL ₃₂₆	SL ₃₂₇	SL ₃₂₈	SL ₃₂₉	SL ₃₃₀	SL ₃₃₁	SL ₃₃₂	SL ₃₃₃	SL ₃₃₄	SL ₃₃₅	SL ₃₃₆	SL ₃₃₇	SL ₃₃₈	SL ₃₃₉	SL ₃₄₀	SL ₃₄₁	SL ₃₄₂	SL ₃₄₃	SL ₃₄₄	SL ₃₄₅	SL ₃₄₆	SL ₃₄₇	SL ₃₄₈	SL ₃₄₉	SL ₃₅₀	SL ₃₅₁	SL ₃₅₂	SL ₃₅₃	SL ₃₅₄	SL ₃₅₅	SL ₃₅₆	SL ₃₅₇	SL ₃₅₈	SL ₃₅₉	SL ₃₆₀	SL ₃₆₁	SL ₃₆₂	SL ₃₆₃	SL ₃₆₄	SL ₃₆₅	SL ₃₆₆	SL ₃₆₇	SL ₃₆₈	SL ₃₆₉	SL ₃₇₀	SL ₃₇₁	SL ₃₇₂	SL ₃₇₃	SL ₃₇₄	SL ₃₇₅	SL ₃₇₆	SL ₃₇₇	SL ₃₇₈	SL ₃₇₉	SL ₃₈₀	SL ₃₈₁	SL ₃₈₂	SL ₃₈₃	SL ₃₈₄	SL ₃₈₅	SL ₃₈₆	SL ₃₈₇	SL ₃₈₈	SL ₃₈₉	SL ₃₉₀	SL ₃₉₁	SL ₃₉₂	SL ₃₉₃	SL ₃₉₄	SL ₃₉₅	SL ₃₉₆	SL ₃₉₇	SL ₃₉₈	SL ₃₉₉	SL ₄₀₀	SL ₄₀₁	SL ₄₀₂	SL ₄₀₃	SL ₄₀₄	SL ₄₀₅	SL ₄₀₆	SL ₄₀₇	SL ₄₀₈	SL ₄₀₉	SL ₄₁₀	SL ₄₁₁	SL ₄₁₂	SL ₄₁₃	SL ₄₁₄	SL ₄₁₅	SL ₄₁₆	SL ₄₁₇	SL ₄₁₈	SL ₄₁₉	SL ₄₂₀	SL ₄₂₁	SL ₄₂₂	SL ₄₂₃	SL ₄₂₄	SL ₄₂₅	SL ₄₂₆	SL ₄₂₇	SL ₄₂₈	SL ₄₂₉	SL ₄₃₀	SL ₄₃₁	SL ₄₃₂	SL ₄₃₃	SL ₄₃₄	SL ₄₃₅	SL ₄₃₆	SL ₄₃₇	SL ₄₃₈	SL ₄₃₉	SL ₄₄₀	SL ₄₄₁	SL ₄₄₂	SL ₄₄₃	SL ₄₄₄	SL ₄₄₅	SL ₄₄₆	SL ₄₄₇	SL ₄₄₈	SL ₄₄₉	SL ₄₅₀	SL ₄₅₁	SL ₄₅₂	SL ₄₅₃	SL ₄₅₄	SL ₄₅₅	SL ₄₅₆	SL ₄₅₇	SL ₄₅₈	SL ₄₅₉	SL ₄₆₀	SL ₄₆₁	SL ₄₆₂	SL ₄₆₃	SL ₄₆₄	SL ₄₆₅	SL ₄₆₆	SL ₄₆₇	SL ₄₆₈	SL ₄₆₉	SL ₄₇₀	SL ₄₇₁	SL ₄₇₂	SL ₄₇₃	SL ₄₇₄	SL ₄₇₅	SL ₄₇₆	SL ₄₇₇	SL ₄₇₈	SL ₄₇₉	SL ₄₈₀	SL ₄₈₁	SL ₄₈₂	SL ₄₈₃	SL ₄₈₄	SL ₄₈₅	SL ₄₈₆	SL ₄₈₇	SL ₄₈₈	SL ₄₈₉	SL ₄₉₀	SL ₄₉₁	SL ₄₉₂	SL ₄₉₃	SL ₄₉₄	SL ₄₉₅	SL ₄₉₆	SL ₄₉₇	SL ₄₉₈	SL ₄₉₉	SL ₅₀₀	SL ₅₀₁	SL ₅₀₂	SL ₅₀₃	SL ₅₀₄	SL ₅₀₅	SL ₅₀₆	SL ₅₀₇	SL ₅₀₈	SL ₅₀₉	SL ₅₁₀	SL ₅₁₁	SL ₅₁₂	SL ₅₁₃	SL ₅₁₄	SL ₅₁₅	SL ₅₁₆	SL ₅₁₇	SL ₅₁₈	SL ₅₁₉	SL ₅₂₀	SL ₅₂₁	SL ₅₂₂	SL ₅₂₃	SL ₅₂₄	SL ₅₂₅	SL ₅₂₆	SL ₅₂₇	SL ₅₂₈	SL ₅₂₉	SL ₅₃₀	SL ₅₃₁	SL ₅₃₂	SL ₅₃₃	SL ₅₃₄	SL ₅₃₅	SL ₅₃₆	SL ₅₃₇	SL ₅₃₈	SL ₅₃₉	SL ₅₄₀	SL ₅₄₁	SL ₅₄₂	SL ₅₄₃	SL ₅₄₄	SL ₅₄₅	SL ₅₄₆	SL ₅₄₇	SL ₅₄₈	SL ₅₄₉	SL ₅₅₀	SL ₅₅₁	SL ₅₅₂	SL ₅₅₃	SL ₅₅₄	SL ₅₅₅	SL ₅₅₆	SL ₅₅₇	SL ₅₅₈	SL ₅₅₉	SL ₅₆₀	SL ₅₆₁	SL ₅₆₂	SL ₅₆₃	SL ₅₆₄	SL ₅₆₅	SL ₅₆₆	SL ₅₆₇	SL ₅₆₈	SL ₅₆₉	SL ₅₇₀	SL ₅₇₁	SL ₅₇₂	SL ₅₇₃	SL ₅₇₄	SL ₅₇₅	SL ₅₇₆	SL ₅₇₇	SL ₅₇₈	SL ₅₇₉	SL ₅₈₀	SL ₅₈₁	SL ₅₈₂	SL ₅₈₃	SL ₅₈₄	SL ₅₈₅	SL ₅₈₆	SL ₅₈₇	SL ₅₈₈	SL ₅₈₉	SL ₅₉₀	SL ₅₉₁	SL ₅₉₂	SL ₅₉₃	SL ₅₉₄	SL ₅₉₅	SL ₅₉₆	SL ₅₉₇	SL ₅₉₈	SL ₅₉₉	SL ₆₀₀	SL ₆₀₁	SL ₆₀₂	SL ₆₀₃	SL ₆₀₄	SL ₆₀₅	SL ₆₀₆	SL ₆₀₇	SL ₆₀₈	SL ₆₀₉	SL ₆₁₀	SL ₆₁₁	SL ₆₁₂	SL ₆₁₃	SL ₆₁₄	SL ₆₁₅	SL ₆₁₆	SL ₆₁₇	SL ₆₁₈	SL ₆₁₉	SL ₆₂₀	SL ₆₂₁	SL ₆₂₂	SL ₆₂₃	SL ₆₂₄	SL ₆₂₅	SL ₆₂₆	SL ₆₂₇	SL ₆₂₈	SL ₆₂₉	SL ₆₃₀	SL ₆₃₁	SL ₆₃₂	SL ₆₃₃	SL ₆₃₄	SL ₆₃₅	SL ₆₃₆	SL ₆₃₇	SL ₆₃₈	SL ₆₃₉	SL ₆₄₀	SL ₆₄₁	SL ₆₄₂	SL ₆₄₃	SL ₆₄₄	SL ₆₄₅	SL ₆₄₆	SL ₆₄₇	SL ₆₄₈	SL ₆₄₉	SL ₆₅₀	SL ₆₅₁	SL ₆₅₂	SL ₆₅₃	SL ₆₅₄	SL ₆₅₅	SL ₆₅₆	SL ₆₅₇	SL ₆₅₈	SL ₆₅₉	SL ₆₆₀	SL ₆₆₁	SL ₆₆₂	SL ₆₆₃	SL ₆₆₄	SL ₆₆₅	SL ₆₆₆	SL ₆₆₇	SL ₆₆₈	SL ₆₆₉	SL ₆₇₀	SL ₆₇₁	SL ₆₇₂	SL ₆₇₃	SL ₆₇₄	SL ₆₇₅	SL ₆₇₆	SL ₆₇₇	SL ₆₇₈	SL ₆₇₉	SL ₆₈₀	SL ₆₈₁	SL ₆₈₂	SL ₆₈₃	SL ₆₈₄	SL ₆₈₅	SL ₆₈₆	SL ₆₈₇	SL ₆₈₈	SL ₆₈₉	SL ₆₉₀	SL ₆₉₁	SL ₆₉₂	SL ₆₉₃	SL ₆₉₄	SL ₆₉₅	SL ₆₉₆	SL ₆₉₇	SL ₆₉₈	SL ₆₉₉	SL ₇₀₀	SL ₇₀₁	SL ₇₀₂	SL ₇₀₃	SL ₇₀₄	SL ₇₀₅	SL ₇₀₆	SL ₇₀₇	SL ₇₀₈	SL ₇₀₉	SL ₇₁₀	SL ₇₁₁	SL ₇₁₂	SL ₇₁₃	SL ₇₁₄	SL ₇₁₅	SL ₇₁₆	SL ₇₁₇	SL ₇₁₈	SL ₇₁₉	SL ₇₂₀	SL ₇₂₁	SL ₇₂₂	SL ₇₂₃	SL ₇₂₄	SL ₇₂₅	SL ₇₂₆	SL ₇₂₇	SL ₇₂₈	SL ₇₂₉	SL ₇₃₀	SL ₇₃₁	SL ₇₃₂	SL ₇₃₃	SL ₇₃₄	SL ₇₃₅	SL ₇₃₆	SL ₇₃₇	SL ₇₃₈	SL ₇₃₉	SL ₇₄₀	SL ₇₄₁	SL ₇₄₂	SL ₇₄₃	SL ₇₄₄	SL ₇₄₅	SL ₇₄₆	SL ₇₄₇	SL ₇₄₈	SL ₇₄₉	SL ₇₅₀	SL ₇₅₁	SL ₇₅₂	SL ₇₅₃	SL ₇₅₄	SL ₇₅₅	SL ₇₅₆	SL ₇₅₇	SL ₇₅₈	SL ₇₅₉	SL ₇₆₀	SL ₇₆₁	SL ₇₆₂	SL ₇₆₃	SL ₇₆₄	SL ₇₆₅	SL ₇₆₆	SL ₇₆₇	SL ₇₆₈	SL ₇₆₉	SL ₇₇₀	SL ₇₇₁	SL ₇₇₂	SL ₇₇₃	SL ₇₇₄	SL ₇₇₅	SL ₇₇₆	SL ₇₇₇	SL ₇₇₈	SL ₇₇₉	SL ₇₈₀	SL ₇₈₁	SL ₇₈₂	SL ₇₈₃	SL ₇₈₄	SL ₇₈₅	SL ₇₈₆	SL ₇₈₇	SL ₇₈₈	SL ₇₈₉	SL ₇₉₀	SL ₇₉₁	SL ₇₉₂	SL ₇₉₃	SL ₇₉₄	SL ₇₉₅	SL ₇₉₆	SL ₇₉₇	SL ₇₉₈	SL ₇₉₉	SL ₈₀₀	SL ₈₀₁	SL ₈₀₂	SL ₈₀₃	SL ₈₀₄	SL ₈₀₅	SL ₈₀₆	SL ₈₀₇	SL ₈₀₈	SL ₈₀₉	SL ₈₁₀	SL ₈₁₁	SL ₈₁₂	SL ₈₁₃	SL ₈₁₄	SL ₈₁₅	SL ₈₁₆	SL ₈₁₇	SL ₈₁₈	SL ₈₁₉	SL ₈₂₀	SL ₈₂₁	SL ₈₂₂	SL ₈₂₃	SL ₈₂₄	SL ₈₂₅	SL ₈₂₆	SL ₈₂₇	SL ₈₂₈	SL ₈₂₉	SL ₈₃₀	SL ₈₃₁	SL ₈₃₂	SL ₈₃₃	SL ₈₃₄	SL ₈₃₅	SL ₈₃₆	SL ₈₃₇	SL ₈₃₈	SL ₈₃₉	SL ₈₄₀	SL ₈₄₁	SL ₈₄₂	SL ₈₄₃	SL ₈₄₄	SL ₈₄₅	SL ₈₄₆	SL ₈₄₇	SL ₈₄₈	SL ₈₄₉	SL ₈₅₀	SL ₈₅₁	SL ₈₅₂	SL ₈₅₃	SL ₈₅₄	SL ₈₅₅	SL ₈₅₆	SL ₈₅₇	SL ₈₅₈	SL ₈₅₉	SL ₈₆₀	SL ₈₆₁	SL ₈₆₂	SL ₈₆₃	SL ₈₆₄	SL ₈₆₅	SL ₈₆₆	SL ₈₆₇	SL ₈₆₈	SL ₈₆₉	SL ₈₇₀	SL ₈₇₁	SL ₈₇₂	SL ₈₇₃	SL 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Requirement	Description
Insolation (exposure to sun)	Reptiles bask openly in direct sunlight or seek warm sites under cover (in vegetation or under object) or partially exposed amidst dense vegetation (mosaic basking). Varied topography (south-facing slopes are particularly favoured by reptiles) and a mosaic of open, sunny areas and dense cover provide the best range of basking opportunities.
Shelter from the elements (heat, dry weather and wind), predators	Reptiles need vegetation cover and open areas in close proximity to each other. The best habitats are structurally diverse habitats, or mosaics of vegetation of differing heights, ages or types. Thorny or prickly plants such as gorse and bramble can provide particularly good refuge from predators and may be used as sheltered basking sites.
Hibernation opportunities (shelter during the winter)	Hibernation sites must be climatically stable, frost-free, humid (but not wet) and safe from flooding and predators. Typical hibernation sites include mammal burrows, rotted tree stumps and root holes, fissures in soil / substrate, large grass tussocks, anthills, old walls and building foundations, piles of rubble and other debris and under large logs and fallen trees. Sand lizard, grass snake, smooth snake and adder usually make seasonal movements to hibernation sites. Slow worm and common lizard may also make shorter distance migrations to hibernation features, but the location of hibernation features normally corresponds with the areas used during the active season.
Food	Legged lizard (common lizard and sand lizard): Main prey items are insects and other invertebrates such as spiders. Legless lizard (slow worm): Main prey items are soft-bodied invertebrates such as slugs and worms. Smooth snake: Main prey items are reptiles and small mammals. Grass snake: Main prey items are amphibians and fish. Adder: Main prey items are small mammals and occasionally lizards.
Breeding habitat	Breeding sites are more likely to be found where structurally diverse habitats encourage high population densities. Reptiles require secluded areas close to, or under, secure cover for courting and mating. Grass snakes need access to decomposing material to lay their eggs. Typical egg-laying sites include manure heaps, compost heaps, piles of grass clippings, sawdust, cut reed and, in coastal areas, seaweed heaps. Sand lizards require areas of exposed sand (or similar loose substrate) with good sun exposure in which to lay their eggs.

The below habitat suitability criteria have been adapted based on the ecology and specific ecological requirements of reptiles (as described in C1).

Habitat suitability category	Ecological Functionality for Reptiles (one or more species)	Typical Characteristics of habitats within this Category*
High	Provides significant opportunities for foraging; shelter / protection; basking; breeding; and hibernation.	Heterogenous habitat (e.g. grassland, scrub, woodland edges). Structurally diverse habitats, mosaics of vegetation of differing heights, ages or types (e.g. tussocky grassland, dense scrub/islands). Extensive landscape connectivity to suitable off-site reptile habitat.
Moderate	Provides significant opportunities for two or three of the above key ecological functions.	Homogenous / slightly heterogenous habitat (one to two dominant habitats e.g. grassland and scrub). Habitat structure is diverse, but habitat type is uniform (e.g. tussocky grassland only). Sub-optimal landscape connectivity to suitable off-site reptile habitat.
Low	Provides significant opportunities for one of the above key ecological functions or some limited (minimal) opportunities for two or more of these functions.	Uniform habitat composition (e.g. grassland). Limited vegetative structure (e.g. closely mown or grazed grassland). Possess limited landscape connectivity to suitable offsite habitat.
Negligible	Negligible Does not provide any opportunities for reptiles.	Unvegetated areas, such as bare ground and buildings.
*Note that the characteristics given in Column 3 of this Table are typical characteristics of high, medium, low and negligible suitability habitats, and are provided for illustrative purposes to aid the assignment of a habitat suitability category. They are not absolute criteria or universal rules that will always dictate the suitability category that the habitat within a given survey site must fall within.		

Hazel dormouse

The content of the below Table has been taken from the Hazel Dormouse Conservation Handbook and details trees and shrubs of value to dormice (Bright et al., 2006). The presence and percentage cover of tree and shrub species listed in this Table informs the suitability criteria that are set out within the following 'Hazel Dormouse Habitat Suitability Criteria' Table.

Species	Description
Hazel	Where present, this is the principal source of food (nuts) for fattening up prior to hibernation. Hazel also supports many insects, including caterpillars, which are potential dormouse food. Hazel forms a continuous understorey of sprawling poles, easy for arboreal activity and is a very valuable (but not essential) species for the dormouse.
Oak	An important source of insect food (including caterpillars). Dormice also eat oak flowers, but acorns are of little value
Honeysuckle	The plant's finely shredded bark is the preferred nesting material used by dormice. Honeysuckle flowers also provide food at a time when few other things are available, with berries later. The climbing strands also offer convenient routes into the trees and provide dense shelter in which to nest.
Bramble	Its flowers and fruits are very important dormouse foods and tend to be available for a long period (especially where the site has slopes which vary the amounts of sunlight on the shrubs) and the thorns provide good protection for nests. Bramble often flowers late, when many other species are over, and dormice also eat the berries and seeds in autumn. Dormice seem to thrive where blackberries are abundant, even in the absence of hazel. Bramble is best if scattered among hazels and trees.
Sycamore	A valuable source of insect food and pollen. A useful tree: dormice can survive in habitats with many sycamores. However, sycamores cast a dense shade which reduces the understorey. Thus sycamores should be kept few and scattered, perhaps coppiced to prevent seeding and to reduce the extent of shading.
Ash	Ripening seeds ('keys') are eaten whilst they are still on the tree, but ash supports few food insects. The canopy does not cast a dense shade, but generally ash woodlands are not good habitat.
Wayfaring tree	Fruits in late summer when little else may be available. Dormice eat the seeds and probably also the flowers. Yew The fruits are a favoured food and dormice will make special excursions to reach them, but the seeds are not eaten.
Hornbeam	Seeds are small and hard, but dormice eat them. The advantage is that they are too small to be attractive to squirrels, so they may form an alternative food where squirrels have taken most of the hazel nuts. Fruiting is erratic.

Broom	Flowers are eaten in early summer.
Sallow	Unripe seeds are eaten from the flowers in early summer. Sallow also supports many insects
Species	Description
Birch	The catkins are over too early in the year to be much use to dormice, but they can eat the seeds. These are too small to attract squirrels and may provide support where squirrels compete for hazel nuts.
Sweet chestnut	Chestnuts are an excellent food source and dormice may also eat the flowers.
Blackthorn	Fruits (kernels) are eaten but the flowers come too early in the year. Dense blackthorn thickets tend to be avoided where alternative shrubs are available.
Hawthorn	Flowers are an important food in the spring. The fruits are eaten occasionally.
Conifers	Little is known about the use made of these trees by dormice, but they often support many aphids and caterpillars – potential dormouse food. The trees may also provide shelter from the wind and rain in exposed sites.
Other species such as cherry, crab apple, holly, ivy.	Little is known about the value of these trees to dormice, but it is likely that they will eat the pollen (stamens) and perhaps fruits. Ivy is a useful source of food insects and its evergreen tangles among tree branches are often used for summer nesting sites.

The below habitat suitability criteria have been adapted based on the ecology and specific ecological requirements of the hazel dormice.

Suitability Category	Ecological Functionality for hazel dormice	Typical Characteristics of habitats within this Category
High	Provides significant opportunities for: - foraging; - shelter / protection; - breeding; and - hibernation.	5 or more native tree and/or shrub species of value to dormice present (as per list provided in Table 8). Dense canopy, understorey and/or shrub layer (as present) with good aerial connectivity.
Medium	Provides opportunities for two or three of the above ecological functions.	Between 2 and 4 native tree and/or shrub species of value to dormice present. Sub-optimal aerial connectivity (non-continuous / 'gappy' canopy, understorey and/or shrub layer (as present)).
Low	Provides opportunities for one of the above ecological functions.	0 or 1 native tree or shrub species of value to dormice present. Canopy, understorey and/or shrub layer (as present) are 'sparse,' with poor / infrequent aerial connectivity.
Negligible	Does not provide any opportunities for hazel	Un-vegetated areas, includes bare ground and buildings

	dormouse.	
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