Preliminary Ecological Appraisal and Biodiversity Net Gain

Sompting Community Farm

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LIABILITIES:
Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing, and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snapshot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 INTRODUCTION

Background

1.1 The Ecology Partnership was commissioned by Nicolas Pople to undertake a Preliminary Ecological Appraisal (PEA) and Biodiversity Net Gain assessment for Sompting Community Farm, Sompting, West Sussex, BN15 0EW, hereafter referred to as the 'site' (Figure 1).

1.2 The key objectives of a PEA (CIEEM 2017) are to:

- Identify the likely ecological constraints associated with a project;
- Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
- Identify the opportunities offered by a project to deliver ecological enhancement.

Site Context

The site (TQ168046) is located off Test Road in the village of Sompting, covers an area of approximately 1.62ha and is situated between reasonably dense residential development to the north and east and an agricultural landscape to the west. Cokeham Brooks Local Wildlife Site (LWS) is located adjacent to the south of the site. The site mainly consists of grassland, ruderal vegetation, allotments, a pond and a polytunnel in use through the community farm activities.

Figure 1: Site red line boundary.

Proposed Development

1.3 The proposed development (Figure 2) includes the installation of a new polytunnel, an additional allotment area, a mindfulness sanctuary, two new buildings, extension of the existing car parking area, as well as new footpaths, tracks, and a picnic area. The development also incorporates various biodiversity enhancements, including new hedgerows, new trees, and a large pond.

Figure 2: Proposed Development.

Planning Policies

1.4 The site was surveyed to assess its ecological value and to ensure the proposals were compliant with relevant planning policy and legislation. Policy guidance is provided by the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities, and Local Government, 2025) as well as policies from the Adur District Council. The following policies are considered relevant to ecology, biodiversity and nature conservation:

Adur Local Plan (2017):

- Policy 30: Green Infrastructure
- Policy 31: Biodiversity

1.5 The Environment Bill received Royal Assent on 9th November 2021 and is now enacted as the Environment Act 2021. Part 6 (Nature and Biodiversity) and Schedule 14 of the Environment Act 2021 insert a new section 90A and Schedule 7A into the Town and Country Planning Act 1990 (TCPA), which contain the provisions requiring mandatory biodiversity net gain for development granted planning permission pursuant to the TCPA. These provisions require developments to provide a biodiversity value post-development that exceeds the predevelopment biodiversity value of the onsite habitats by at least 10%. However, as part of Policy P7, Guildford requires a 20% biodiversity net gain.

1.6 The assessment also takes into consideration nature conservation and wildlife legislation including, but not limited to, the Wildlife and Countryside Act 1981 (as amended), the Natural Environment and Rural Communities (NERC) Act 2006 and the Conservation of Habitats and Species (EU Exit) Regulations 2019.

1.7 The report has been produced with reference to current guidelines for PEA (CIEEM 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

2.0 METHODOLOGY

Desktop Study

2.1 A desktop study was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and an internet-based aerial mapping service (maps.google.co.uk) was used to understand the habitats present in and around the site, including identifying habitat linkages and features (ponds, woodlands etc.) within the wider landscape.

2.2 Records of protected/notable species and non-statutory designated sites within 1km of the site were requested from Sussex Biodiversity Records Centre (SxBRC).

Phase 1 Habitat Survey and UKHab Assessment

2.3 The site was surveyed on 16th April 2025 by principal ecologist Eddie Selwyn BSc (Hons) MSc and assistant ecologist Finn Young BSc (Hons). The surveyors identified the habitats present, following the 'Phase 1 habitat survey' auditing method (Joint Nature Conservancy Council (JNCC)) and the UK Habitat classification system (UKHab V2). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map.

Preliminary Roost Assessment (PRA)

2.4 The buildings (internally and externally) were assessed for their suitability for roosting bats following Bat Conservation Trust Good Practice Guidelines (Collins 2023). The surveyors checked for evidence of roosting bat species and Potential Roosting Features (PRFs).

2.5 The surveyors assessed the buildings visually and searched for evidence such as:

- Staining beneath or around a hole caused by natural oils in bat fur.
- Bat droppings beneath a hole, roost or resting area.
- Bat droppings and/or insect remains beneath a feeding area.
- Audible squeaking from within a hole.
- Insects (especially flies) around a hole.
- Dead bats.

Ground Level Tree Assessment (GLTA)

2.6 The trees on site were assessed externally from the ground for their suitability for roosting bats following Bat Conservation Trust Good Practice Guidelines (Collins 2023). The surveyors checked for evidence of roosting bat species and PRFs.

Great Crested Newt eDNA Survey

2.7 Pond P1 is located within the site, and no additional ponds are located within 250m of the site (Figure 5).

2.8 Pond P1 was subject to an eDNA on 6th June 2025 to determine if Great Crested Newts (GCN) *Triturus cristatus* have been within the pond in 2024. All water samples were analysed by SureScreen Scientifics in accordance with the protocol set out in Appendix 5 of Biggs et al. (2014).

Protected Species Assessments

2.9 Any evidence of additional protected species was recorded. Standard methods of search and measures of presence, or likely presence based on habitat suitability were used for breeding birds (BTO 2020), hazel dormice *Muscardinus avellanarius* (Bright *et al.* 2006), GCN (ARG 2010), reptiles (Froglife 2015), badgers *Meles meles* (Creswell *et al*. 1990) and water voles *Arvicola amphibius* (Strachan *et al*. 2011).

Limitations

2.10 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. The site was visited once, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of the potential nature conservation value of the site and does not include a definitive plant species list.

2.11 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, based on this assessment, it is considered reasonably likely that protected species may be present.

3.0 RESULTS

Desktop Study

3.1 No international designated sites are located within 15km of the site. The closest is Arun Valley Special Area of Conservation (SAC), Special Protection Area (SPA), and Ramsar, located approximately 15.29km northwest.

3.2 One national statutory designated site is located within 2km of the site (Figure 3). Lancing Ring Local Nature Reserve (LNR) is located approximately 1.5km northeast of the site and is designated for supporting chalk grassland and woodland habitats as well as a dew pond. Notable species present here include adder *Vipera berus*, common lizard *Zootoca vivipara*, newts, and early purple orchids *Orchis mascula*.

Figure 3: National statutory designated sites within 2km (red circle) of the site.

3.3 One non-statutory designated site is located within 1km of the site. Cokeham Brooks Local Wildlife Site (LWS), located immediately south of the site, comprises wetland, grassland and woodland habitats. The wetland in particular is noted for including a feature known locally as flushed fen, as well as supporting a rich diversity of plants, invertebrates, and breeding birds.

3.4 Three priority habitat types have been identified within 1km of the site. The closest of each type are:

- **Deciduous Woodland** located approximately 140m south.
- **Woodpasture and Parkland** located approximately 850m north.

Figure 4: Priority habitats within 1km of the site. Deciduous woodland (dark green) and woodpasture and parkland (green with symbols).

3.5 OS mapping and aerial images indicate there is one pond located within 250m of the site (Figure 5). This pond is located within the site boundary.

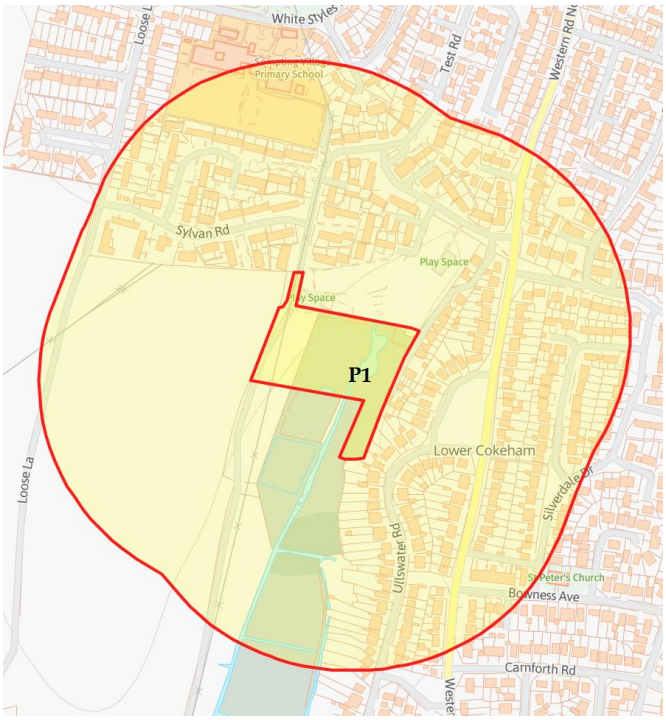

Figure 5: Ponds within 250m of the site.

3.6 The closest past European Protected Species (EPS) licences for each species are:

- **Bat** – located approximately 3.5km northeast of the site, 2013 licence for the destruction of a breeding site for common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrelle *Pipistrellus pygmaeus*, and common serotine *Eptesicus serotinus.*
- **GCN** – located approximately 2.1km northwest, 2009-2011 licence for the damage and destruction of a resting place and breeding site.
- **Dormouse** – located approximately 12.4km northwest, 2019-2024 licence for the destruction of a breeding site and resting place.

3.7 The closest GCN newt class survey licence return with GCN present is from 2016, approximately 6.3km west of the site.

3.8 Relevant records from SxBRC to the site are included in Table 1 below. Some species have not been included due to the age of the record and the likelihood of presence on site due to habitat types.

Table 1: Notable species records within 1km of the site.

Species	Designations	Closest record to site
Common pipistrelle *Pipistrellus pipistrellus*	Hab Dir A4; Hab Reg Sch2; NERC S41; WCA Sch5 s9.4b/s9.4c/s9.5a; UK BAP Priority	650m SW 2017
European hedgehog *Erinaceus europaeus*	NERC 241; UK BAP Priority; RedList GB	720m E 2017
Harvest mouse *Micromys minutus*	NERC 241; UK BAP Priority; RedList GB	620m SW 2019
Slow-worm *Anguis fragilis*	WCA Sch5 s9.1/s9.1 kill/s9.5a; NERC S41; UK BAP Priority	290m W 2024
Grass snake *Natrix helvetica*	WCA Sch5 s9.1/s9.1 kill/s9.5a; NERC S41; UK BAP Priority	730m SW 2017
Common lizard *Zootoca vivipara*	WCA Sch5 s9.1/s9.1 kill/s9.5a; NERC S41; UK BAP Priority	860m SW 2017

Habitats

3.9 The full species list is in **Appendix 1,** site photos are in **Appendix** 2, the map of existing habitats is presented in **Appendix 3**, and the condition assessment tables are in **Appendix 4**.

Modified grassland

3.10 The predominant habitat on site is modified grassland. Grass species include Yorkshire fog, cock's-foot, and meadow foxtail. Other species include ribwort plantain, white clover, and creeping buttercup.

Ruderal vegetation

3.11 Ruderal vegetation is present, particularly along the margins of the site. Nettle dominates this habitat, and other species include cleavers, broad-leaved dock, oxeye daisy, and bristly oxtongue.

Mixed scrub

3.12 There are four parcels of mixed scrub within the site, including an area along the western boundary that had recently been planted as part of the proposed development prior to the site visit.

Allotments

3.13 There is an active allotment area in the centre of the site.

Individual trees

3.14 Individual trees are scattered throughout the site. Species include oak, poplar, and elm.

Hedgerows and treelines

3.15 Five hedgerows and one treeline are present within the site. A native hedgerow is located along the eastern edge of the site as well as around the yurt building, a native hedgerow with trees is located along the northern edge of the site, a species-rich native hedgerow is present in the west of the site, and an elder treeline is present near the southwest edge of the site.

Buildings

3.16 There are multiple buildings within the site. A row of dilapidated sheds and stables are present along the northern margin of the site and are to be removed as part of the development. These buildings are of wooden construction with metal cladding for the roofing. Other buildings which will be retained include a small single-storeyed office and store building, as well as a polytunnel. The remains of a destroyed yurt are present just south of the allotment area.

Artificial unvegetated; unsealed surface

3.17 Access tracks and footpaths around the site are classified as unvegetated unsealed surfaces.

Pond

3.18 A pond is present within the site. The purpose of the pond is both for stormwater attenuation as well as to provide a biodiverse habitat.

Protected Species

Bats

PRA

3.19 The buildings to be impacted by the development are considered to have **'negligible'** suitability for roosting bats due to their dilapidated state as well as an absence of PRFs.

GLTA

3.20 No PRFs were observed on any of the trees on site, although ivy cover on some trees may be concealing PRFs.

Foraging and commuting habitat

3.21 The habitats and linear features within the site offer opportunities for foraging and commuting bats. Furthermore, bats may be active in the surrounding area, particularly amongst the agricultural land to the west and the LWS to the south.

Badgers and other mammals

3.22 An active badger sett is known to be present within the site along the western boundary. Furthermore, the site offers suitable foraging and commuting habitat for badgers and other mammals such as foxes and hedgehogs.

Birds

3.23 The individual trees, hedgerows, scrub, and buildings within the site have the potential to support nesting birds. Inactive swallow nests were identified within the dilapidated stables during the site visit.

Dormice

3.24 The hedgerows and scrub within the site could provide habitat opportunities for dormice. However, no records for dormice are present in the local area and the closest EPS licence is 12.4km away. Furthermore, the small scale of the development is considered to have minimal impact on any suitable habitat regardless. As such, no further surveys for dormice are required and this species will not be discussed further in this report.

GCN

3.25 There is one pond located within the site, which could offer a breeding opportunity for GCN. Surrounding habitat could also provide refuge opportunities.

Reptiles

3.26 The ruderal vegetation, scrub habitats, and areas of taller grass provide foraging and refuge opportunities for reptiles. Furthermore, the record search by SxBRC revealed records of slow-worm, common lizard, and grass snake in the surrounding area (Table 1). However, the scale of the development is considered to have minimal impact on any reptile populations within the site. Reasonable Avoidance Measures (RAMs) have been recommended.

Other Species

3.27 Due to a lack of suitable habitat, the site is not considered suitable for other protected species such as water voles and otters. As such, no further surveys are recommended, and these species will not be discussed further within this report.

4.0 DISCUSSION

4.1 The following paragraphs consider the effects of the development on designated sites, priority habitats and protected and priority species. Where the desk study and Phase 1 survey provide sufficient evidence for an assessment of effects on any of these groups to be taken through planning, these are detailed below, the need for additional surveys and when and how these should be completed are summarised, if required.

4.2 Provisional recommendations are also given for means to enhance biodiversity following the principle (CIEEM et al. 2016) of following the mitigation hierarchy of; avoidance, minimisation of loss, compensation on site and biodiversity offset.

Effects on Designated Sites

4.3 The Impact Risk Zones indicate that the development will not impact any SSSIs, SACs, SPAs and Ramsar sites.

4.4 Cokeham Brooks LWS is located adjacent to the site. It is recommended that construction safeguards are implemented to prevent impacts from dust, water, light and noise. With the implementation of construction safeguards and based on the small scale of the development is considered unlikely to have any direct or indirect impacts on this LWS. As such, the proposed development will have no direct or indirect impact on designated sites.

Effects on priority habitats

4.5 The closest priority habitat is deciduous woodland located approximately 140m northeast. Due to the distance of the site from any priority habitats, it is considered that the proposed development will have no direct or indirect impact on any priority habitats.

Effect on On-site Habitats

4.6 The habitats on site are common and widespread across the UK, and the majority will be retained. It is considered that any removal of habitat has already been sufficiently offset by habitat creation within the site. As such, it is considered that the impact on the on-site habitat is negligible.

Effects on Protected Species

Bats

Ground Level Tree Assessment

4.7 Ivy covered trees may be concealing PRFs on some trees within the site, however no tree removals are included in the proposed development. These trees should be subject to a thorough inspection prior to any work that may impact them.

Preliminary Roost Assessment

4.8 It is determined that the buildings to be removed – the stables and sheds – have **'negligible'** suitability for roosting bats due to their dilapidation and subsequent exposure to light and weather. As such, they can be removed without further consideration.

Foraging and commuting habitat

4.9 According to Bat Conservation Trust guidelines, it is important that proportionality is employed when recommending further survey work for bat species on a proposed development site. As stated within section 2.2.19 of the latest survey guidelines (2023), the following points need to be taken into account with regard to planning bat surveys:

- Likelihood of bats being present;
- Type of proposed activities;
- Scale of proposed activities;
- Size, nature and complexity of the site;
- Species concerned;
- Number of individuals

4.10 Considering the above as well as the small scale of the proposals, it is considered that activity surveys for bats would not be required. Furthermore, it is considered that the development of the site would not impact the ecological functionality of the local landscape.

4.11 It is recommended, that any proposed lighting scheme as part of the development should consider bats in the surrounding area as well as the site. All bat species are nocturnal, resting in dark conditions during the day and emerging at night to feed. Bats are known to be affected by light levels, which can affect both their roosting and foraging behaviour. Recommendations include:

- Installing lighting only if there is a significant need;
- Using sodium lamps instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics;
- Directing lighting to where it is needed and avoiding light spillage;
- Using baffled lighting where light is directed towards the ground and
- Avoid putting lighting near trees or hedgerows and angling light away from these linear features which are used by commuting and foraging bats.

GCN

4.12 The pond within the site was subject to an eDNA survey and returned negative. As such, GCN have not been be present within the pond and are unlikely to be present within the local area.

Reptiles

4.13 Based on the limited impact of the proposed development, further surveys for reptiles are not considered necessary. The RAMs detailed above for great crested newts are considered suitable to avoid killing and injuring individual reptiles. If a reptile is identified on-site during work, then the reptile will be moved to a suitable habitat on the site.

4.14 Small sections of medium sward height grassland and ruderal vegetation will be removed as part of the development. As such, the following Reasonable Avoidance Measures (RAMs) should be employed during habitat clearance to avoid impacting reptiles.

- Habitat clearance should be overseen by an ecologist. Initially, the ground should be hand-searched by the ecologist for reptiles. If the vegetation is tall and dense, then sensitive cutting with hand tools should be undertaken and overseen by the ecologist. Reducing the height of the vegetation will allow an additional more thorough hand search to be undertaken for great crested newts and reptiles.
- If deemed suitable by the ecologist, the ground can be slowly stripped with a toothless bucket on an excavator. The removed sections of vegetation should be gently placed on the ground adjacent and checked by the ecologist before they are removed.

- The removal of rooted vegetation (hedgerows, trees and dense scrub) should not be undertaken during the great crested newt and reptile hibernation period (November-March).
- Rooted vegetation should be removed after a thorough hand search by an ecologist. Once checked, the roots should be slowly removed with an excavator overseen by an ecologist. The root balls should be lifted slowly, intact and placed on the ground for further inspection by the ecologist for reptiles.
- Prior to the commencement of works on site and after habitat clearance, the location of the proposed development and potential compound should be kept in a state that is unattractive to great crested newts and reptiles and without potential refuge opportunities.
- Skips and pallets should be stored on hardstanding where possible and should be elevated off the ground. This is to ensure no features are created that reptiles could potentially use as refugia.
- Where trenches and holes are dug, these should not be left open overnight as reptiles, other amphibians and small mammals may get trapped in vertical-sided trenches. Therefore, where there is a risk of this occurring, the holes should be refilled or planks of wood should be placed so that any trapped animals may use these to escape. An ecologist should be contacted to remove any wildlife that becomes trapped.

4.15 If reptiles are identified on site during work, then these reptiles will be moved to suitable retained habitat within the site.

4.16 It is considered that if these methods are used on site, then it is considered that reptiles would not be harmed as a result of the proposals.

Badgers and other mammals

4.17 Badgers are likely to be using the site due to the presence of an active sett, and other mammals such as foxes and hedgehogs may use the site for commuting and foraging. The small scale of the development is considered unlikely to cause significant disturbance to these species and/or their habitat. However, precautionary construction measures are recommended. The guidelines are as follows:

- Any trenches or excavations on site should be either covered over at night or a plank of wood placed in to allow any mammals to escape if they were to accidentally fall in.

- Any open pipes or conduits should be blocked off each night to prevent any small mammals from entering them.
- Disturbances, such as loud noises, vibrations and flood lighting in association with night work should be minimised.

Birds

4.18 The trees, hedgerows, buildings, and scrub habitats within the site have the potential to support nesting birds. It is recommended that the removal of suitable vegetation is undertaken outside of the breeding bird season (March-September inclusive) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

4.19 The proposed development will result in the loss of suitable swallow nesting habitat. As such, it is recommended that new swallow cups be incorporated into the proposed development (Figure 6).

Figure 6: Swallow Cups.

Ecological Enhancements

4.20 Several enhancements can be made to the final development to further opportunities for wildlife.

4.21 Bird boxes can be hung on mature trees to increase the number of breeding opportunities (Figure 7). Bird boxes hung on trees should be woodcrete (or similar) as they provide better thermal properties, are longer lasting and more durable than

wooden boxes. The box should be positioned on a north or east facing aspect and at least 2m above the ground if possible.

Figure 7: Vivara Small Bird Nest Box.

4.22 To enhance the local bat population and provide additional roosting opportunities within the site, bat boxes can be hung on trees within the site. These provide good opportunities for crevice-dwelling species such as pipistrelles. The bat boxes should be least 4m from ground level in a location not illuminated by artificial lighting. Habibat, in association with the Bat Conservation Trust, provides a range of boxes which are unfaced for render or designed to match the brickwork of the building. Recommended boxes (Figure 8) include:

- Vivara Pro WoodStone Bat Box – A general purpose bat box that supports a range of species. These can be hung on trees in a variety of heights and aspects in order to provide a variety of micro-climates.
- Large Multi Chamber WoodStone Bat Box – This is a multipurpose box designed for larger colonies and a range of bat species including pipistrelles, noctules and brown long-eared bats. These should be hung on mature trees around the site.

Figure 8: Vivara Pro WoodStone Bat Box (left) and Large Multi Chamber WoodStone Bat Box (right)

4.23 It is recommended to place hedgehog homes across the site (Figure 9). These provide areas of shelter for hedgehogs within the site, helping support the local population.

Figure 9: Example of a hedgehog house that can be utilised on site.

4.24 To support the invertebrates and bees using the site, Bee Bricks (Figure 10) can be incorporated into the buildings. The Bee Brick can be used in place of a standard brick or block in construction to create a habitat for solitary bees. Bee Bricks need to be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. No cleaning or management of the Bee Bricks is required.

Figure 10: Bee bricks to be incorporated into the development.

5.0 BIODIVERSITY NET GAIN ASSESSMENT

5.1 A BNG assessment has been undertaken for the proposed development with the Statutory Biodiversity Metric. The habitat baseline is detailed in Figure 11 and habitat creation is in Figure 12.

5.2 Habitat creation as part of the proposed development had already commenced prior to the site visit. Included in this creation is: a stormwater attenuation and biodiversity habitat pond; a parcel of mixed scrub along the western boundary; a native hedgerow and a species-rich native hedgerow. These habitats have been incorporated into the BNG assessment as on-site habitat creation.

Habitat Baseline

5.3 The baseline habitats are shown in Tables 2 and 3 and Figure 11 below.

Table 2: Habitat Breakdown – Baseline

Habitat type	Area (ha)	Condition
Modified Grassland	1.050	Poor
Artificial unvegetated; unsealed surface	0.090	Condition Assessment N/A
Developed land; sealed surface	0.039	Condition Assessment N/A
Ruderal	0.105	Moderate
Mixed scrub	0.095	Moderate
Mixed scrub	0.009	Poor
Allotments	0.077	0.077
Bramble scrub	0.005	Condition Assessment N/A
Tall forbs	0.15	Poor
Urban tree x4	0.0489	Good
Urban tree x2	0.0081	Moderate
Total Area (excluding trees)	**1.62**	

Table 3: Linear Features Breakdown – Baseline

Linear feature type	Length (km)	Condition
Native hedgerow with trees	0.146	Moderate
Native hedgerow	0.180	Good
Native hedgerow	0.045	Good
Line of trees	0.015	Moderate
Total Length	**0.386**	

Figure 11: Habitat Baseline.

Habitat Creation

5.4 The habitats to be created are shown below in Tables 4 and 5 and Figure 12 below.

Table 4: Habitat Breakdown – Creation

Habitat type	Area (ha)	Condition
Created		
Ponds (priority habitat)	0.15	Moderate
Developed land; sealed surface	0.053	Condition Assessment N/A
Artificial unvegetated; unsealed surface	0.121	Condition Assessment N/A
Modified grassland	0.016	Poor
Mixed scrub	0.007	Poor
Allotments	0.021	Poor
Introduced shrub	0.005	Condition Assessment N/A
Urban tree x43	0.1059	Moderate
Retained		
Developed land; sealed surface	0.021	Condition Assessment N/A
Artificial unvegetated; unsealed surface	0.090	Condition Assessment N/A
Modified grassland	0.878	Poor
Mixed scrub	0.095	Moderate
Mixed scrub	0.009	Poor
Allotments	0.077	Poor
Ruderal	0.072	Moderate
Bramble scrub	0.005	Condition Assessment N/A
Urban tree x4	0.0489	Good
Urban tree x2	0.0081	Moderate
Total Area (excluding trees)	**1.62**	

Table 5: Linear Features Breakdown – Creation

Linear feature type	Length (km)	Condition
Created		
Native hedgerow	0.030	Good
Species-rich native hedgerow	0.121	Moderate
Retained		
Native hedgerow with trees	0.146	Moderate
Native hedgerow	0.180	Good
Native hedgerow	0.045	Good
Line of trees	0.015	Moderate
Total Length	**0.537**	

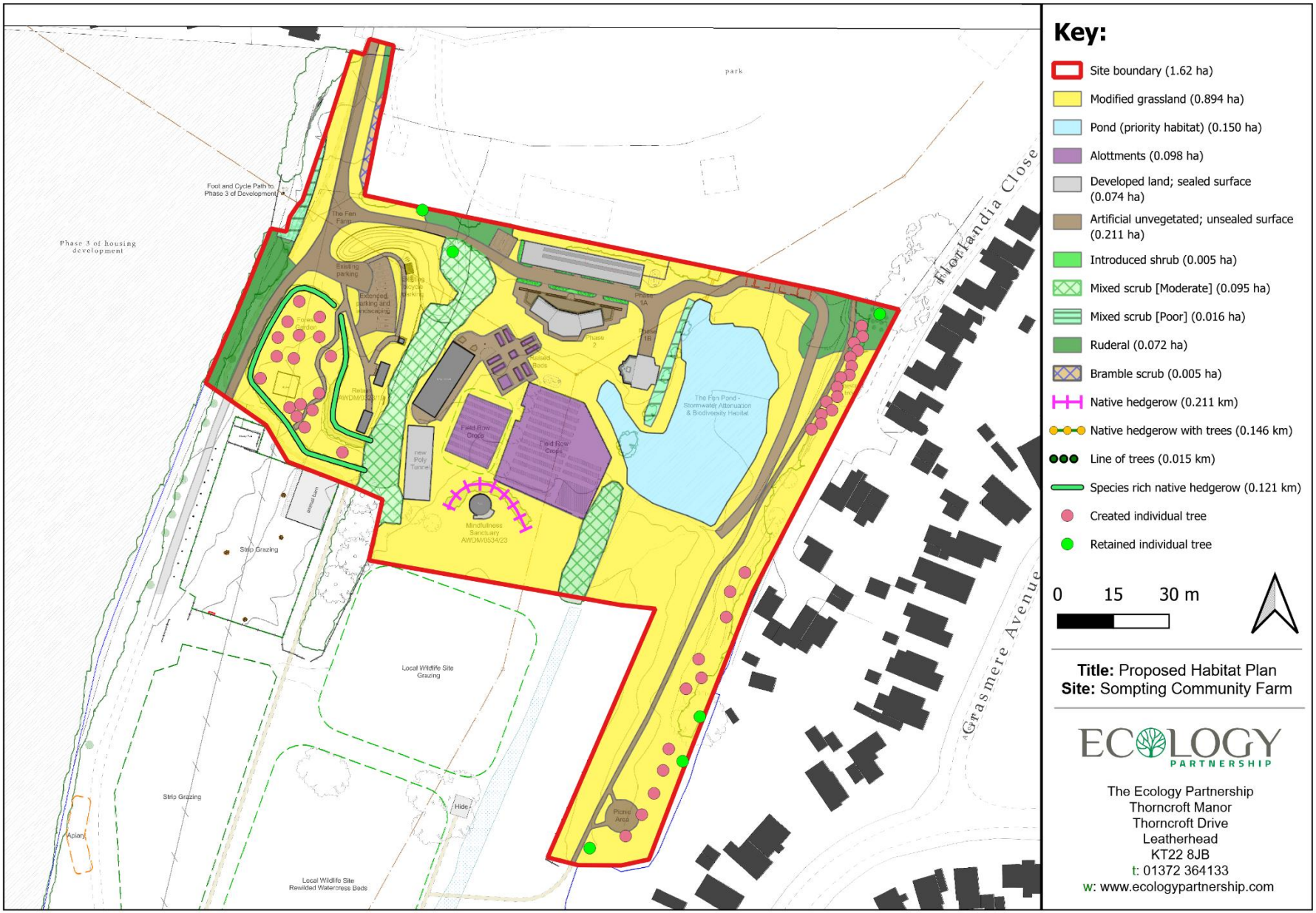

Figure 12: Proposed habitat creation.

5.5 The habitat creation detailed in Figure 12 would result in a **+21.41%** biodiversity net gain in habitat units and a **+35.97%** net gain in hedgerow units, and the trading rules would be satisfied (Figure 13).

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Area habitat units*	0.95
	Hedgerow units	0.93
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Area habitat units*	21.41%
	Hedgerow units	35.97%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

Figure 13: Headline results – Statutory Biodiversity Metric.

6.0 IMPACT ASSESSMENT

6.1 This section of the report forms an Ecological Impact Assessment (EcIA) and is designed to quantify and evaluate the potential impacts of the development on habitats and species present on site or within the local area.

6.2 The approach to this assessment accords with guidance presented within the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018). In essence, an EcIA assesses the activities associated with a proposed scheme that are likely to generate changes within the identified zone of influences, on identified ecological features and receptors. The proposals are subsequently reviewed and mitigation and compensation measures are outlined which help to reduce negative impacts.

6.3 Table 2 below summarises the impacts and required mitigation for each receptor as previously detailed in the discussion.

Table 2: Assessment of effects from the proposal after mitigation and compensation

Feature	Scale of Importance	Mitigation/Compensation Required	Residual Effect
Designated Sites	National	Cokeham Brooks LWS is located immediately adjacent to the site. The scale of proposed developments considered unlikely to have direct or indirect impacts on the LWS.	Not significant
On-Site Habitats and Priority Habitats	Site	The majority of the habitats on site will be retained. Any removal of habitat will be sufficiently offset through on-site planting as part of the development. No priority habitats will be impacted directly or indirectly by the development.	Not significant.
Bat (roosting)	Site	No PRFs were observed on the trees within the site, although ivy cover may be concealing PRFs. No trees are being removed as part of the current proposals. These trees should be subject to a thorough inspection prior to any work that may impact them. It is determined that the dilapidated stable buildings have 'negligible' suitability for roosting bats. As such, they can be removed without further consideration. Mitigation/Enhancement in the form of bat box installation.	Not significant.
Bats (commuting and foraging)	Local	Suitable habitat on site for foraging and commuting bats. Proposed development would not impact the ecological functionality of the landscape for bat activity.	Not significant

		Mitigation/Enhancement in the form of the installation of sensitive lighting.	
Great Crested Newts	Site	The pond within the site was subject to an eDNA analysis, which determined no evidence of GCN DNA. GCN considered unlikely to be present within the site. RAMs have been recommended as a precautionary measure.	Not significant
Reptiles	Site	Recent records of slow-worm, grass snake, and common lizard have been identified in the surrounding area. The site supports areas of medium sward height grassland. Whilst the proposed development is small in scale, RAMs have been recommended to avoid impacting reptiles which may be using the grassland and ruderal habitats within the site. Mitigation/Enhancement in the form of log pile installation.	Not significant
Dormice	Site	Dormice not known to be present in the surrounding area - no records within 1km identified by SxBRC, and closest EPS license is 12.4km away. Small scale of development considered unlikely to impact suitable scrub and hedgerow habitats within the site.	Not significant
Nesting Birds	Site	Inactive swallow nests identified inside the dilapidated stables. Suitable nesting habitat throughout the site amongst trees, hedgerows, scrub, and buildings. Mitigating direct harm to nests by removal of any suitable nesting habitat outside of nesting bird season or after a check by a suitably qualified ecologist. Mitigation/Enhancement in the form of the installation of bird boxes.	Not significant
Badgers and other mammals	Site	Active badger sett identified along western boundary of site. Suitable habitat for badgers and other mammals throughout the site. Construction safeguards should be implemented to avoid impacting badgers and other mammals that will likely commute or forage within the site. Mitigation/Enhancement in the form of hedgehog houses.	Not significant
Water Voles and Otters	N/A	Considered unlikely to be present on site. Reasonable avoidance measures have been recommended.	Not significant

7.0 CONCLUSION

7.1 The site does not fall within or adjacent to any statutory designated sites. However, the site is immediately adjacent to Cokeham Brooks LWS. The small scale of the proposed development is considered unlikely to have any direct or indirect impacts on this LWS or any other designated sites in the surrounding area.

7.2 The small scale of the proposed development is considered unlikely to have any direct or indirect impacts on priority habitats in the surrounding area. Removal of on-site habitats is considered insignificant and will be sufficiently offset through on-site planting as part of the development.

7.3 The proposed habitat creation would result in a **+21.41%** biodiversity net gain in habitat units and a **+35.97%** net gain in hedgerow units, and the trading rules would be satisfied.

7.4 The dilapidated stable buildings have '**negligible'** suitability for roosting bats, and can be removed without further consideration for bats. A number of trees within the site have ivy cover which could be concealing PRFs. These trees should be subject to a thorough inspection prior to any work that may impact them.

7.5 An active badger sett has been identified along the western boundary of the site, although the development is considered unlikely to impact its functionality. Nonetheless, it is recommended that precautionary construction measures are implemented to avoid impacting badgers and small mammals that might forage and commute on the site.

7.6 Birds may use the scrub, trees, hedgerows, and buildings for nesting. Any works to these features should therefore be undertaken outside of bird nesting season (March – September inclusive) or after a nesting bird check by a qualified ecologist.

7.7 Although dormice, great crested newts and reptiles are not considered present within the site, as a precaution, Reasonable Avoidance Measures (RAMs) should be employed during habitat clearance to avoid impacting great crested newts and reptiles. RAMs will minimise the risk of an offence being committed under Regulation 41 of the Conservation of Habitats and Species Regulations 2010. RAMs will also ensure there are no impacts to small mammals, including hedgehogs.

7.8 Recommendations for enhancements have been made within this report, aimed at improving the site's ecological value.

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Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Existing Habitats Plan

Appendix 2: Full species list

Modified grassland		
Common name	**Latin name**	**DAFOR score**
Meadow foxtail	*Alopecurus pratensis*	A
Perennial ryegrass	*Lolium perenne*	A
Cock's-foot	*Dactylis glomerata*	A
Yorkshire fog	*Holcus lanatus*	F
Yarrow	*Achill millefolium*	O
Common ragwort	*Jacobaea vulgaris*	O
Ribwort plantain	*Plantago lanceolata*	O
White clover	*Trifolium repens*	O
Selfheal	*Prunella vulgaris*	O
Bramble	*Rubus fruticosus*	O
Common nettle	*Urtica dioica*	O
Dandelion	*Taraxacum sp.*	O
Broad-leaved dock	*Rumex obtusifolius*	O
Cowslip	*Primula veris*	O
Creeping buttercup	*Ranunculus repens*	O
Spotted medick	*Medicago arabica*	O

Ruderal vegetation / tall forbs	
Common name	**Latin name**
Green alkanet	*Pentaglottis sempervirens*
Bramble	*Rubus fruticosus*
Dandelion	*Taraxacum sp.*
Common nettle	*Urtica dioica*
White dead-nettle	*Lamium album*
Daisy	*Bellis perennis*
Hedge bindweed	*Calystegia sepium*
Cleavers	*Galium aparine*
Broad-leaved dock	*Rumex obtusifolius*
Common mallow	*Malva neglecta*
Yorkshire fog	*Holcus lanatus*
Dove's foot crane's-bill	*Geranium molle*
Creeping buttercup	*Ranunculus repens*
Lesser burdock	*Arctium minus*
Bristly oxtongue	*Helminthotheca echioides*
Common vetch	*Vicia sativa*
Oxeye daisy	*Leucanthemum vulgare*
Alexanders	*Smyrnium olusatrum*
Garlic mustard	*Alliaria petiolate*
Lords-and-Ladies	*Arum maculatum*
Wild strawberry	*Fragaria vesca*
Common ragwort	*Jacobaea vulgaris*
Field forget-me-not	*Myosotis arvensis*
Broad-leaved willowherb	*Epilobium montanum*
Pendulous sedge	*Carex pendula*
Common hogweed	*Heracleum sphondylium*

Pond	
Common name	**Latin name**
Bullrush	*Scirpoides holoschoenus*
Corky-fruited water-dropwort	*Oenanthe pimpinelloides*
Marsh marigold	*Caltha palustris*
Broad-leaved willowherb	*Epilobium montanum*
Common reed	*Phragmites sp.*
Common nettle	*Urtica dioica*
Broad-leaved dock	*Rumex obtusifolius*
Pendulous sedge	*Carex pendula*
Hard rush	*Juncus inflexus*
Creeping buttercup	*Ranunculus repens*
Common knapweed	*Centaurea nigra*
Wild teasel	*Dipsacus fullonum*
Oxeye daisy	*Leucanthemum vulgare*
Ribwort plantain	*Plantago lanceolata*
White dead-nettle	*Lamium album*
Bluebell	*Hyacinthoides non-scripta*

Individual trees			
Tree number	**Common name**	**Latin name**	**Condition**
T1	Poplar	*Populus sp.*	Good
T2	Oak	*Quercus sp.*	Good
T3	Prunus	*Prunus sp.*	Good
T4	Oak	*Quercus sp.*	Good
T5	Elm	*Ulmus procera*	Moderate
T6	Elm	*Ulmus procera*	Moderate

Hedgerow		
Hedgerow	**Type**	**Species**
H1	Native hedgerow with trees	Elder, hawthorn, buddleja, bramble, ivy
H2	Native hedgerow	Elder, hawthorn, nettle, bramble
H3	Native hedgerow	Hawthorn, blackthorn, hazel, field maple, bramble
TL1	Line of trees	Elder

Appendix 3: Photos

Photograph 1: Dilapidated buildings	
Photograph 2: Pond	

Photograph 3: Modified grassland	
Photograph 4: New tree planting	

Appendix 4: Condition Assessment Tables

Condition Sheet: INDIVIDUAL TREES Habitat Type							
UKHab Habitat Type(s): Urban tree: Covers the following topographical formations most commonly found in urban areas[1]: **Individual Trees (urban or rural):** Young trees over 75mm in diameter at breast height whose canopies are not touching. **Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only):** Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies must overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category.							
Condition Assessment Criteria		**T1**	**T2**	**T3**	**T4**	**T5**	**T6**
A	The tree is a native species (or at least 70% within the block are native species).	Pass	Pass	Pass	Pass	Pass	Pass
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Pass	Pass	Pass	Pass	Pass	Pass
C	The tree is mature (or more than 50% within the block are mature)[1].	Pass	Fail	Fail	Pass	Fail	Fail
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain > 75% of expected canopy for their age range and height.	Fail	Pass	Pass	Pass	Fail	Fail
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Pass	Pass	Pass	Pass	Fail	Pass
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Pass	Pass	Pass	Pass	Pass	Pass
	Condition	**G**	**G**	**G**	**G**	**M**	**M**
Condition Assessment Result							
Good	Passes 5 or 6 criteria						
Moderate	Passes 3 or 4 criteria						
Poor	Passes 2 or fewer criteria						
Footnote 1 - See gov.uk standing advice on ancient and veteran trees. Available from: Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk) and: Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk) **Footnote 2** - Enhancement of this habitat type is only possible by improving the habitat so that it meets all Criteria B, D and F. It is not possible or appropriate to enhance individual tree/s through meeting just one or two of those Criteria, nor by meeting Criteria A, C or E.							

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)		
UKHab Habitat Type(s): Grassland - Modified grassland		
Condition Assessment Criteria		**Grassland**
A	There are 6-8 vascular plant species per m present, including at least 2 forbs (this may include those listed in Footnote 1). **Note - this criterion is essential for achieving Moderate or Good condition.** Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m~ (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	Fail
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	Fail
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble *Rubus fruticosus* agg. may be present). Note – patches of scrub with continuous (more than 90% cover should be classified as the relevant scrub habitat type.	Pass
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Pass
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens)[2].	Fail
F	Cover of bracken *Pteridium aquilinum* is less than 20%.	Pass
G	There is an absence of invasive non-native plant species[3] (as listed on Schedule 9 of WCA[4]).	Pass
	Condition	**Poor**

Condition Assessment Result	
Good	Passes 6 or 7 of 7 criteria including essential criterion A
Moderate	Passes 4 or 5 of 7 criteria including passing essential criterion A
Poor	Passes 3 or fewer criteria; OR 4-6 of criteria but failing criterion A

Footnote 1 – Creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*.

Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying the buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Wildlife and Countryside Act 1981 (as amended)

Condition Sheet: URBAN - NON PRIORITY Habitat Type			
UKHab Habitat Type(s): Sparsely vegetated land - Ruderal/ephemeral and Tall forbs; Urban – Allotments/Bioswale/Cemeteries and churchyards/Open mosaic habitats on previously developed land(OMH)/Rain garden/SUDs/bare ground/all green walls and roofs			
Condition Assessment Criteria		**Ruderal**	**Allotments**
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	Pass	Fail
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	Fail	Fail
C	Invasive non-native plant species (listed on Schedule 9 of WCA[1]) and others which are to the detriment of native wildlife (using professional judgement)[2] cover less than 5% of the total vegetated area[3]. **Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).**	Pass	Pass
D	OMH only: The parcel shows spatial variation and forms a mosaic of bare substrate PLUS: - At least four early successional communities (a) to (i): Communities: (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland, (i) pools.	-	-
E1	SUDs/Bioswales only: Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife[4].	-	-
E2	SUDs/Bioswales only: The vegetation is comprised of plant species suited to wetland or riparian situations.	-	-
F	**Intensive green roofs** – The roof has a minimum of 50% native and non-native wildflowers - 70% of the roof area is soil and vegetation (including water features)	-	-
G	**Biodiverse green roofs** - have a varied depth of 80 - 150mm at least 50% is at 150mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. **Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc. be present.**	-	-
	Condition	**Moderate**	**Poor**
Condition Assessment Result			
Good	Passes 3 of 3 core criteria; AND Meets the requirements for good condition within criteria 2 and 3	Passes 3 of 3 core criteria; AND Meets the requirements for good condition within criteria 2 and 3; AND Passes additional criterion 4	

Moderate	Passes 2 of 3 core criteria; OR Passes 3 of 3 core criteria but does not meet the requirements for good condition within criteria 2 and 3	Passes 2 of 3 of 4 criteria; OR Passes 4 of 4 criteria but does not meet the requirements for good condition within criteria 2 and 3
Poor	Passes 0 or 1 of 3 core criteria	Passes 0 or 1 of 4 criteria

Footnote 1 – Wildlife and Countryside Act 1981 (as amended).

Footnote 2 – Sources of information about detrimental non-native species can be found on the GB Non-native Species Secretariat (GBNNSS) website:

Home » NNSS (nonnativespecies.org)

And Natural England Access to Evidence page should also be checked for up-to-date information:

Horizon-scanning for invasive non-native plants in Great Britain - NECR053 (naturalengland.org.uk)

For criterion C – For green roof habitat types only – buddleia *Buddleja davidii* should be assessed alongside Schedule 9 species. This species impairs the health of the local ecosystem and reduces the biodiversity potential of the roof. It is also a sign that a roof has not been planted and seeded correctly in subsequent years.

Footnote 3 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 4 – Use professional judgement. Sources of information about non-native species that are not detrimental to native wildlife can be found on the GBNNSS website:

Alternative plants » NNSS (nonnativespecies.org)

Condition Sheet: SCRUB Habitat Type		
UKHab Habitat Type(s): All forms of scrub		
Condition Assessment Criteria		**Mixed scrub**
A	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).[1] - At least 80% of scrub is native, - There are at least three native woody species[2], - No single species comprises more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* or box *Buxus sempervirens*, which can be up to 100% cover).	Pass
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[3]) shrubs are all present.	Pass
C	There is an absence of invasive non-native plant species[4] (as listed on Schedule 9 of WCA[5]) and species indicative of sub-optimal condition[8] make up less than 5% of ground cover.	Pass
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	Fail
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Fail
	Condition	**Moderate**

Condition Assessment Result	
Good	Passes 5 of 5 criteria
Moderate	Passes 3 or 4 of 5 criteria
Poor	Passes 2 or fewer criteria

Footnote 1 – Professional judgement should be used alongside the UKHab description.
Footnote 2 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK.* 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 3 – See gov.uk standing advice on ancient and veteran species. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 5 – Wildlife and Countryside Act 1981 (as amended).

Footnote 6 – Species indicative of suboptimal condition for this habitat type may include: non-native conifers, tree-of-heaven *Alianthus altissima*, holm oak *Quercus ilex*, European turkey oak *Quercus cerris*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos* spp., shallon *Gaultheria shallon*, American skunk cabbage *Lysichiton americanus*, buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* and hybrid bluebells *Hyacinthoides x massartiana*. There may be additional relevant species local to the region and or site.

Condition Assessment Criteria	Criteria achieved?		
Hedgerows	**H1**	**H2**	**H3**
Height >1.5 m average along length	Pass	Pass	Pass
Width >1.5 m average along length	Pass	Pass	Pass
Gap – hedge base Gap between ground and base of canopy <0.5 m for >90% of length	Pass	Pass	Pass
Gap – hedge canopy continuity Gaps make up <10% of total length and No canopy gaps >5 m	Pass	Pass	Pass
Undisturbed perennial vegetation >1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length (on one side of the hedge (at least))	Fail	Pass	Pass
Undesirable species Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	Fail	Fail	Fail
Invasive species >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA[3]) and recently introduced species.	Pass	Pass	Pass
Current Damage >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	Pass	Pass	Pass
Tree Age (if hedgerow with trees) There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient), and there is on average at least one mature, ancient or veteran tree present per 20 - 50m of hedgerow.	Fail	-	-
Tree health (if hedgerow with trees) At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Pass	-	-
Criteria failed	**3**	**1**	**1**
Condition (G = good; M = moderate; P = poor)	**Moderate**	**Good**	**Good**

Hedgerows Condition Assessment Result		
	Hedgerow without trees	**Hedgerow with trees**
Good	No more than 2 failures in total; AND No more than 1 in any functional group.	No more than 2 failures in total; AND No more than 1 failure in any functional group.
Moderate	No more than 4 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & C2 = Moderate condition).	No more than 5 failures in total; AND Does not fail both attributes in more than one functional group (e.g. fails attributes A1, A2, B1, C2 & E1 = Moderate condition).
Poor	Fails a total of more than 4 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).	Fails a total of more than 5 attributes; OR Fails both attributes in more than one functional group (e.g. fails attributes A1, A2, B1 & B2 = Poor condition).

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook. A standard procedure for local surveys in the UK.* [online] Available on:
layout (hedgelink.org.uk)

Footnote 2 – STALEY, J.T. ET AL. (2020) *Definition of Favourable Conservation Status for Hedgerows.* [online] Available on:
Definition of Favourable Conservation Status for Hedgerows - RP2943 (naturalengland.org.uk)

Footnote 3 – Wildlife and Countryside Act 1981 (as amended).

Footnote 4 – CHEFFINGS, C. M. et al. (2005) *The Vascular Plant Red Data List for Great Britain.* Species Status 7: 1-116. [online] Available on:
The Vascular Plant Red Data List for Great Britain (Species Status No. 7) | JNCC Resource Hub

Footnote 5 – BOTANICAL SOCIETY OF BRITAIN AND IRELAND (BSBI). *Definitions: wild, native or alien?* [online] Available on:
Definitions: wild, native or alien? – Botanical Society of Britain & Ireland (bsbi.org)

Footnote 6 – BSBI and Biological Records Centre (BRC) (2022) *Online Atlas of the British and Irish Flora.* [online] Available on:
Acknowledgements | Online Atlas of the British and Irish Flora (brc.ac.uk)

Footnote 7 – GB NON-NATIVE SPECIES SECRETARIAT (GBNNSS) (2022) Available on:
Home » NNSS (nonnativespecies.org)

Footnote 8 – See gov.uk standing advice on ancient and veteran trees. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Condition Sheet: LINE OF TREES Habitat Type		
Condition Assessment Criteria		**TL1**
A	More than 70% of trees are native species.	Pass
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide.	Pass
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	Pass
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice[2]	Fail
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this. There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	Pass
	Condition	**Moderate**
Condition Assessment Result		
Good	Passes 5 of 5 criteria	
Moderate	Passes 3 or 4 of 5 criteria	
Poor	Passes 0, 1 or 2 of 5 criteria	

Footnote 1 – DEFRA (2007) *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK.* 2nd ed [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 2 – Where ancient and veteran trees are present, see gov.uk standing advice on ancient and veteran trees. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and:
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Appendix 5: eDNA Report

Folio No:	2303-2025
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Contact:	The Ecology Partnership
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SureScreen Scientifics

GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus* , inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
GCN25 4528	Sompting - P1	TQ 1687 0462	Pass	Pass	Negative	0/12

Matters affecting result: none

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Methodology

The samples detailed above have been analyzed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample tube which then undergoes DNA extraction. The extracted sample is then analyzed using real-time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded. Analysis of eDNA requires attention to detail to prevent the risk of contamination. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added analytical security.

SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

Interpretation of Results

Sample Integrity Check:	When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.
Degradation Check:	**Pass/Fail**. Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.
Inhibition Check:	**Pass/Fail.** The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.
Result:	**Presence of GCN eDNA (Positive/Negative/Inconclusive)** **Positive:** GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location. **Positive Replicates:** Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with the WC1067 Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence. **Negative:** GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection. **Inconclusive:** Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.

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