LIZARD
Landscape Design and Ecology

ECOLOGICAL IMPACT ASSESSMENT

Limekiln Farm, Broadwater Lane, Copsale

On Behalf of: Ms S. Price

Client:	Ms S. Price			
Project:	Limekiln Farm, Broadwater Lane, Copsale			
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Validity:

This report is valid for 18 months from the date of the site visit. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

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SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Ms S. Price to undertake an Ecological Impact Assessment of the proposed development of Limekiln Farm, Broadwater Lane, Copsale (*Grid Reference: TQ 18788 25831 – hereafter referred to as 'the site'*). A Preliminary Ecological Appraisal was undertaken on 10th of March 2023. An assessment of the ecological impact of the proposals was then undertaken using the baseline data of these surveys.

The main body of the site is dominated by species-poor grassland with acidic indicators, and a bare earth access track; habitats of low ecological value. The adjacent tree lines and woodland are of high ecological value and shall be retained within the scheme.

The application is accompanied by a water neutrality statement which demonstrates how water neutrality shall be achieved, and an agricultural package which demonstrates that all surrounding mature trees and woodland shall be retained.

Preliminary roost assessment noted various features within the mature trees which were considered to confer moderate or high bat roost suitability. The site also offers suitable habitat for amphibians, small mammals and breeding birds. Avoidance and mitigation measures have been built into the design of the scheme in accordance with the mitigation hierarchy and BS42020: 2013. These measures shall ensure that works proceed in accordance with the relevant legislation and no animals are harmed.

Once avoidance, mitigation and compensation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible.** Proposed ecological enhancements shall result in creation of a variety of habitats on site and Biodiversity Net Gain in accordance with local and national planning policy.

1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned by Ms S. Price to undertake an Ecological Impact Assessment of the proposed development at Limekiln Farm, Broadwater Lane, Copsale (*Grid Reference: TQ 18788 25831– hereafter referred to as 'the site'*). This report has been informed by a Preliminary Ecological Appraisal which was undertaken on 10th of March 2023.

1.2 The scope of this assessment has been determined with consideration of best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and the Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013).

1.3 A summary of the results of these surveys, potential impacts of the proposals, and details of avoidance, mitigation and compensation measures have been detailed within this report. Residual impacts are then discussed once all mitigation and compensation measures have been taken into account.

Site Information

1.4 The site covers c. 2.2 hectares (Ha) of farmland, accessed via a largely unmade access track from Broadwater Lane to the west. The site is bound by the access track to the north, farmland to the west and woodland to the south and east.

Surrounding Landscape

1.5 The immediate surrounding landscape is rural, formed of grazing land with a good percentage of woodland cover. The village of Nuthurst is located c. 0.4km east, while the residential area of Southwater is approximatley 2.2km west.

Development Proposals

1.6 The proposal is for the erection of a stable block, sand school, barn, water purificarion plant and manure store. The existing access track shall also be made good with road planings to allow access to the southern field.

Report Aims

1.8 The aim of the baseline surveys and Ecological Impact Assessment has been:

- Describe baseline conditions at the site;
- Determine the importance of features which may be impacted by the scheme;
- Identify impacts of the proposed development and set out appropriate avoidance, mitigation and compensation measures;
- To identify any residual impacts;
- To provide details of enhancements to be incorporated into the scheme;
- Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation, and where appropriate, to allow conditions or obligations to be proposed by the relevant authority.

2.0 PLANNING POLICY AND LEGISLATION

Legislation

2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EcIA includes:

- The Conservation of Habitats and Species Regulations 2017;
- The Wildlife and Countryside Act 1981 (as amended);
- The Natural Environment and Rural Communities (NERC) Act 2006; and
- The Environment Act 2021.

2.2 This above legislation has been addressed, as appropriate, in the production of this report.

National Planning Policy

2.3 The National Planning Policy Framework (*NPPF*) 2021 sets out the government planning policies for England and how they should be applied. '*Chapter 15: Conserving and Enhancing the Natural Environment*' states that development should be '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*.'

2.4 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

Local Planning Policy

2.5 The emerging Horsham District Local Plan will set the long-term spatial vision and development strategy for the borough up to 2036. It has however yet to be formally adopted and the Horsham District Planning Framework 2015 still forms the basis of local planning policy.

2.6 Policy 31 of the Horsham District Planning Framework (as of Nov 2018) states the following:

- Development will be supported where it can demonstrate that it maintains or enhances the existing network of green infrastructure. Proposals that would result in the loss of existing green infrastructure will be resisted unless it can be demonstrated that new opportunities will be provided that mitigates or compensates for this loss and ensures that the ecosystem services of the area are retained.
- Development proposals will be required to contribute to the enhancement of existing biodiversity and should create and manage new habitats where appropriate. The Council will support new development which retains and /or enhances significant features of nature conservation on development sites. The Council will also support development which makes a positive contribution to biodiversity through the creation of green spaces, and linkages between habitats to create local and regional ecological networks.
- Where felling of protected trees is necessary, replacement planting with a suitable species will be required.
- Particular consideration will be given to the hierarchy of sites and habitats in the district as follows: i. Special Protection Area (SPA) and Special Areas of Conservation (SAC) ii. Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) iii. Sites of Nature Conservation Importance (SNCIs), Local Nature Reserves (LNRs) and any areas of Ancient woodland, local geodiversity or other irreplaceable habitats not already identified in i & ii above.
- Where development is anticipated to have a direct or indirect adverse impact on sites or features for biodiversity, development will be refused unless it can be demonstrated that: i. The reason for the development clearly outweighs the need to protect the value of the site; and, ii. That appropriate mitigation and compensation measures are provided.
- Any development with the potential to impact Arun Valley SPA or the Mens SAC will be subject to HRA to determine need for Appropriate Assessment. In addition, development will be required to be in accordance with necessary mitigation measures for development set out in HRA of this plan.

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 The Multi-Agency Geographic Information for the Countryside (*MAGIC*) was consulted for all designated sites within a practicable zone of influence of the site. This included Local Nature Reserves (LNRs), National Nature reserves (NNR) and Sites of Special Scientific Interest (SSSIs) within a 2.0km radius of the site, and international statutory designated sites including Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsars (Wetlands of International Importance) within a 10km radius of the site.

3.1.2 MAGIC was also used to provide information on all Priority Habitats within a 2.0km radius of the site, and all records of granted European Protected Species Mitigation licences within a 1.0km radius of the site.

3.1.3 Protected and notable species data within 2.0km of the site was provided by Thames Valley Environmental Records Centre (TVERC) to support the original PEA in 2021.

3.1.4 In accordance with Natural England's GCN Mitigation Guidelines (English Nature, 2001) a desktop search was undertaken to identify ponds within 500m and 250m of the site, which may have the potential to support breeding great crested newts (GCN) *Triturus cristatus,* using Ordnance Survey mapping, the *MAGIC* database and aerial photography.

3.2 Preliminary Ecological Appraisal

3.2.1 The field survey was undertaken on 10th of March 2023 by Catherine O'Reilly (MCIEEM, 9 years professional experience). Weather conditions were cold (c.5°C), with a light north-easterly wind (Beaufort Scale 2) and occasional light rain.

3.2.2 The field survey comprised a walkover inspection of the site and immediately adjacent land and boundaries features, in which ecological features were noted and mapped in accordance with principles of the UKHabs-Professional Classification System (Butcher *et al*, 2020). Habitats were identified to at least level 4 wherever practicable.

3.2.3 A list of plant species was compiled, together with an estimate of abundance (*Table No. 05*). In addition, Target notes were used to provide supplementary information on features which were particularly interesting or significant to specific construction proposals, or too small to map.

3.2.4 The survey methodology was extended to provide more detail in relation to the sites potential to support rare or protected fauna, as described by the *Chartered Institute of Ecology and Environmental Management's Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017b)*. The assessment of habitat suitability for protected, rare or priority species is based on current good practice guidance such as that presented in the *Herpetofauna Workers' Manual (Gent and Gibson, 2003)* and *Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collin (ed.), 2016*).

3.3 Preliminary Bat Roost Assessment

3.3.1 A Preliminary Bat Roost Assessment was undertaken on 10th of March 2023 by Catherine O'Reilly (Class 2 licence holder) who undertook a ground level assessment of the existing trees within and adjacent to the site. The bat surveyor assessed the trees visually for direct evidence of bats evidence, such as;

- Grease Marks;
- Urine Stains;
- Bat Droppings;
- Feeding Remains;
- Dead or Live Bats.

3.3.2 Trees were visually identified from the ground, using binoculars where necessary, for any features that could be used by bats such as:

- Woodpecker Holes;
- Knot Holes;
- Tear-outs;
- Flush Cuts;
- Double Leaders.

3.3.3 Once features had been assessed the trees were then categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016) (shown below).*

Table No. 01 – Bat Roost Suitability Guidelines (BCT, 2016)

Category	Trees
`Negligible`	No suitable features identified.
`Low`	Tree of sufficient size / age to support bat roost features; but with none identified from the ground.
`Moderate`	Tree with features which, may support a bat roost of low conservation status.
`High`	A tree with several potential bat roost sites that are suitable for use by a large number of bats.

3.4 Great Crested Newt Habitat Suitability Index Assessment

3.4.1 The Habitat Suitability Index (HSI) was developed by Oldham et al (2000) as a way of providing a numerical index allowing a direct comparison to be made between different water bodies. This index assesses ponds against 10 no. different criteria, each of which have a bearing on the likelihood of great crested newt *Triturus cristatus* being present in the pond under consideration.

3.4.2 The 10 no. attributes against which ponds can be assessed are:

- Geographic Location;
- Pond Area (at its highest levels);
- Permanence;
- Water Quality;
- Perimeter Shading;
- Numbers of Wildfowl;
- Numbers of Fish Present;
- Pond Count (within a 1.0 km radius;
- Terrestrial habitat (within 250.0 m);
- Macrophyte Coverage.

3.4.3 The *HSI* results in a score between 1 and 0 with 1 being optimal conditions and 0 being unlikely to support a population. However, the index merely gives an indication as to whether a pond has the potential to support great crested newts and is not a substitute for more detailed presence / absence surveys for protected species of amphibian.

3.5 Ecological Impact Assessment

3.5.1 The methodology for Ecological Impact Assessment (EcIA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and subsequently rating the potential effects of the development based on the sensitivity and value of the resource affected, combined with the magnitude, duration and scale of the impact (or change). This is initially assessed without mitigation measures, and then assessed again after allowing for the proposed mitigation measures; this provides the residual effects. The assessment is divided into construction effects and longer-term operational effects.

3.5.2 The CIEEM guidelines (2018) state that ecological features should be considered within a 'defined geographical context'. The geographical frame of reference used to determine ecological importance in this assessment is detailed below:

- International and European;
- National;
- Regional;
- County;
- District;
- Local;
- Site Level;
- Negligible.

3.5.3 Based upon CIEEM guidance, value was determined with reference to the following factors:

- Its inclusion as a Designated Site or other protected area;
- The presence of habitat types of conservation significance, e.g. Habitats of Principal Importance (NERC 2006);
- The presence (or potential presence) of species of conservation significance e.g. Species of Principal Importance (NERC 2006);
- The presence of other protected species e.g. those protected under The Wildlife and Countryside Act 1981;
- The site's social and economic value.

3.5.4 The ecological impacts resulting from the proposals were then described according to a defined set of characteristics as defined within *'Guidelines for Ecological Impact Assessment in the UK and Ireland*' (*CIEEM, 2018*). When describing impacts the assessment refers to characteristics such as the extent; magnitude; duration; frequency; and, reversibility of the impact in order to provide justification for any conclusions about the nature and likelihood of the impact described.

3.5.5 Where initial impacts have been identified as significant, avoidance, mitigation and compensation measures have been proposed to avoid, prevent or offset such effects. This assessment then considers residual impacts (*once all mitigation has been taken into account*), with any significant effects highlighted. A significant effect is defined as "*an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*". Enhancement has been proposed to ensure that the development represents a net gain in biodiversity in accordance with National Policy.

3.6 Constraints and Limitations

3.6.1 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants, may not have been visible and hence overlooked. These are accepted constraints associated with the standard Survey Methodology.

3.6.2 No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological value has been made.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated Sites

Statutory Protected Sites

4.1.1 There are no statutory designed sites witin the predicted Zone of Influence of the development. The nearest nationally designated site is St Leonards Forest SSSI (4.3km NE) and the nearest international designation is The Mens SAC, located 15km west.

4.1.2 The site is in the Risk impact Zone (IRZ) of St Leonards Forest SSSI, however the proposed development does not meet the criteria which would require the Local Planning Authority (LPA) to consult with Natural England regarding potential impacts upon this site.

4.1.3 The site is located within the Sussex North Water Extraction Zone, whereby increased potable water demand may adversely affect the Arun Valley SPA/SAC.

Non-Statutory Protected Areas

4.1.4 *Local Wildlife Sites* (*LWSs*) are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2021)* and as such are material considerations when assessing planning applications. The following LWS's are located within 2.0km of the site.

Table No. 02 – Non-Statutory Protected Sites

Site	Reason for Designation	Location
Boyds Wood and Furzefield Copse	Ancient semi natural ghyll woodland recent broadleaved woodland which are both botanically rich	0.5km E
Sedgewick Park	Unimproved meadow, herb rich parkland and ancient woodland complex with high ecological value and notable rarity	0.7km NW

The Downs Link, Nutham Wood And Greatsteeds Farm Meadow	Dismantled railway of semi natural woodland, plantation wood, streams and neutral meadow with high wildlife and recreational value	1.7km SW

Priority Habitat

4.1.5 Within 2.0km of the site there are *Priority Habitats* of *Lowland Mixed Deciduous Woodland (*some of which is irreplaceable *Ancient Woodland (ASNW))* and *Traditional Orchards.* The site is bound by an area of woodland (some of which is designated as ASNW) to the south and east.

4.2 Habitats

4.2.1 Habitats within and adjacent to the site include:

- g1d – Other Lowland Acid Grassland
- w1g6 – Line of Trees
- g1c - Bracken
- w1f – Lowland Mixed Deciduous Woodland
- u1c – Artifical Unvegetated Unsealed Surface
- r1a – Eutrophic Standing Water

Other Lowland Acid Grassland

4.2.2 The grassland on site has a short, sheep grazed sward with abundant areas of moss. Common bent *Agrostis capillaris* dominates with abundant areas of yorkshire fog *Holcus lanatus*, cinquefoil sp. (suspected tormentil *Potentilla erecta*) and thyme-leaved speedwell *Veronica serpyllifolia*. Red fescue *Festuca rubra* and germander speedwell *Veronica chamaedrys* were also occasionally noted. An area of common broom *Cytisus scoparius* is present to the south-east of the proposed construction zone. The sward is species-poor, averaging 4 species per square meter and also contains species not typical of acid grassland, it is therefore not considered to be a priority habitat. This habitat is of **site value.**

4.2.3 The eastern section of the field parcel was waterlogged at the time of the survey, with species indicative of regular inundaton including water mint *Mentha aquatica* and rush *Juncus sp.* Species indicative of neutrient enrichment including Nettle *Urtica dioica,* creeping thistle *Circium arvense* and dock *Rumex sp.* were also abundant in this area.

Line of Trees

4.2.4 The two field parcels are divided by a tree line which is dominated by mature oak *Quercus robur* trees with occasional hazel *Corylus avellena*, hawthorn *Crataegus monogyna*, willow *Salix sp.*, bramble *Rubus fruticosus* and elder *Sambucas nigra*. The south-western section of this tree line contains 3no. large, mature oak trees of which one could be considered near-veteran. This historic field boundary is considered to be of **local value.**

Bracken

4.2.5 A small area of bracken is present to the southern field boundary. This habitat is of **negligible** ecological value.

Lowland Mixed Deciduous Woodland

4.2.6 The south-eastern and eastern boundary of the site is formed of mature woodland through which a watercourse flows north-south. Areas along the stream side are dominated by alder *Alnus glutinosa* and willow while areas further north are oak dominated. The woodland has good structure, with a complex understorey of hazel and hawthorn with bluebell H*yacinthoides non-scripta*, dogs mercury *Mercurialis perennis*, sedge and ramsons *Allium ursinum* forming the ground flora. The area of woodland to the east of the watercourse is designated as Ancient Semi-Natural Woodland. This woodland is of **district value.**

4.2.7 A narrow strip of woodland is present to the west of the access track. This woodland is dominated by mature oak trees with ash *Fraxinus excelsior* also noted to the southern section. Abundant hazel comprises the understorey, alongside scattered bramble, with primrose *Primula vulgaris*, dogs mercury, bluebell and ground ivy *Glechoma hederacea* dominating the ground flora. This woodland is of **local value.**

Artificial Unvegetated Unsealed Surface

4.2.8 The existing access track comprises bare earth which had been heavily poached by tractors and other machinery. This habitat is of **negligible value.**

Eutrophic Standing Water

4.2.9 A small pond c. 100m^2 is present within the wooded area to the west of the access track. The pond is heavily shaded with extensive leaf little and fallen deadwood present within the water. The pond does not meet priority criteria and is considered to be of **site value.**

4.3 Protected Species Assessment

Amphibians

Desk Study

4.3.1 Great crested newts have been recorded within 2.0km of the site, including within a recent development at Ghyll House Farm located 0.9km west. Common toad *Bufo bufo*, common frog *Rana temporaria*, smooth newt *Lissotriton vulgaris* and palmate newt *Lissotriton helveticus* records exist within the vicinity of the site.

4.3.2 There are 5 no. ponds within 500.0m of the site, of which 1 no. is within the confines of the site, c. 25m from the proposed construction zone.

Site Assessment

4.3.3 The proposed construction zone is largely unsuitable due to the dominance of bare ground and very short grassland across the site. The surrounding woodland is however considered to provide optimal habitat for amphibians during their terrestrial phase.

HSI Assessment

4.3.4 The pond adjacent to the site covers c. 100m^2 with no macrophyte coverage or emergent vegetation, likely due to the heavy shade cast by the surrounding trees. Water quality was considered to be poor due to the leaf litter, however surrouding habitat is considered to be good with a good number of ponds also present in the local area. The HSI assessment of this pond determined that it offers 'below average' habitat suitability.

Table No. 03 – Summary of HSI Results

HSI Criteria	***Pond P1***
Location	1
Pond Area	0.2
Permanence	0.5
Water Quality	0.33
Shade	0.2
Waterfowl	1
Fish	1
Pond Count	1
Terrestrial Habitat	0.67
Macrophytes	0.3
HSI Score	**0.51**
Suitability	**Below Average**

Reptiles

Desk Study

4.3.5 Records of adder *Vipera berus,* grass snake *Natrix natrix* and common lizard *Zootoca vivipara* exist 600m south-east of the site, with records of slow worm 780m south-west.

Site Assessment

4.3.6 The site comprises very short grassland and bare ground. These habitats offer no opportunites for shelter or hibernation by reptiles, the habitat is therefore of **negligible value** to reptiles.

Bats

Desk Study

4.3.7 Common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, Leisler's *Nyctalus leisleri,* brown long-eared *Plecotus auritus* and *Myotis* sp. bats have been recorded within 2.0km of the site area.

Preliminary Roost Assessment

4.3.8 The trees on site were subject to a full preliminary roost assessment which recorded a number of potential access points as summarised below:

Table No. 04 –Bat Roost Assessment of Trees

Ref	*Description*	*Category*
T01	Early mature oak with tear-out to centre and shedding collar to southern aspect.	Moderate
T02	Early mature oak with tear-out to the western aspect at 6m height.	Low / Moderate
T03	Oak with no discernable features but of a size and age suitable for supporting a bat roost.	Low
T04	Oak with no discernable features but of a size and age suitable for supporting a bat roost.	Low
T05	Oak with no discernable features but of a size and age suitable for supporting a bat roost.	Low
T06	Oak with deadwood and shedding collars.	Moderate
T07	Mature oak with major deadwood, cracks and splits throughout and large tear-out to the centre of the crown.	High
T08	Mature oak with tear-outs, deadwood, cracks and splits throughout the crown.	High
T09	Oak with tear out to south-eastern aspect at 7m height and deadwood throughout.	Moderate / High
T10	Ash tree with cavities, knotholes and woodpecker holes.	High
T11	Ash tree with knot holes throughout.	Moderate
TG12	Mature oak trees along access track, many of which contain potential roost features such as tear-outs, hazard beams, woodpecker holes and cracks and splits.	Moderate - High

Foraging Value

4.3.9 The grassland on site is species-poor and lacks the floristic diversity to support a range of invertebrates suitable for bat foraging. The adjacent woodland and mature treelines are however likely to provide a foraging route and commuting resource for various bat species, including light-adverse species such as myotis and long-eared. The habitat within the construction zone is of **low site value** while the surrounding trees are of **local value.**

Dormouse

Desk Study

4.3.10 There are a small number of dormouse *Muscardinus avellanarius* records within 2.0km of the site, the nearest being 1.7km south-west.

Site Assessment

4.3.11 The adjacent woodland contains abundant species such as hazel, oak and honeysuckle which are suitable for sustaining a dormouse population. These habitats are also functionally linked to other suitable habitats in the wider environment. The grassland within the proposed construction zone however is of **negligible value** to this species.

Hedgehog

Desk Study

4.3.14 A total of 8no. records of hedgehog were returned within the 2.0km search radius.

Site Assessment

4.3.15 The grassland on site provides suitable foraging habitat for hedgehogs, while the woodland to the boundaries provides suitable habitat for hibernation and shelter. Given the abundance of similar habitats in the local area, the habitat on site is of **site value.**

Birds

Desk Study

4.3.16 Protected and notable species within 2.0km include brambling *Fringilla montifringilla* , fieldfare *Turdus pilaris* and firecrest *Regulus ignicapilla* have been recorded within 2.0km of the site.

Site Assessment

4.3.17 The site offers suitable nesting habitat for small passerines in the surrounding trees and scrub. The grassland within the main body of the site is too short to support ground nesting birds such as skylark. The habitats on site are commonly found in the surrounding landscape and are therefore of **site value**.

Invertebrates

Desk Study

4.3.18 The data search returned 11no. records of stag beetle in the vicinity of the site.

Site Assessment

4.3.19 No suitable areas of deadwood which would support invertebrates such as stag beetle were recorded within the proposed construction zone during the survey. The surrounding mature trees and woodland however area likely to provide a foraging resource suitable for supporting a range of invertebrates. The habitats within the site are considered to be of **site value** to common invertebrates.

Invasive Species

Desk Study

4.3.20 The data search returned 1no. records of Rhododendron within 1.0km of the site. No other records of invasive species were returned by the data search.

Site Assessment

4.3.21 No species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded on site during the survey.

5.0 ASSESSMENT OF EFFECTS

5.0.1 Using the Guidelines for Ecological Impact Assessment (IEEM, 2006 & updated by CIEEM, 2018), the assessment set out below considers the potential impacts of the scheme prior to mitigation. Detailed avoidance, mitigation and compensation measures are then discussed, with residual impact identified once these measures have been taken into account. Wherever possible mitigation measures have been designed into the scheme as this gives greater certainty over deliverability and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016).

5.0.2 Protected species for which the site offers negligible suitability have been scoped out of further assessment.

5.1 Designated Sites

Potential Impacts

5.1.1 As the proposals are within the Sussex North Water Extraction Zone, increased potable water extraction in this zone has the potential to adversely impact upon Arun Valley SAC / SPA.

5.1.2 Given the small scale of the proposed development and interveening distance between the site and other protected areas, no impacts upon any other statutory or non-statutory site are predicted to occur.

Mitigation and Compensation

5.1.3 A water neutrality statement accompanies this application which demonstrates how water neutrality can be achieved, thereby avoiding any impact upon the Arun Valley SAC.

Residual Impacts

5.1.4 There shall be **no likely significant effect** upon any designated site as a result of this development.

5.2 Habitats

Potential Impacts

5.2.1 Development proposals will result in the loss of a small area of species-poor other acid grassland and existing bare ground. These habitats are of limited ecological value, the loss of which would be of minor impact magnitude.

5.2.2 In the absence of mitigation, retained trees and woodland may be impacted through root compaction, changes in ground levels, vehicle strike, inappropriate storge of materials and dust smothering during construction. The woodland and watercourse could also be impacted by nutrient run off and other pollutents during the operation phase.

Mitigation and Compensation

5.2.3 Works during the construction phase will be undertaken in accordance with best practise guidelines to control any excess dust creation which may impact retained habitats. Measures shall include sheeting of lorries carrying loose loads to and from site and reduced height of load tipping.

5.2.4 Retained trees shall be protected in accordance with BS5837:2012, as described within the detailed arboricultural package which accompanies this application. All re-fuelling and chemical storage shall take place outside the RPAs, in an appropriate area with containment measures in place and spill kits available.

5.2.5 The proposed scheme includes new hedgerow planting to the southeast of the stables, and northern boundary of the site. The proposed new pond shall control surface water run-off while the manure shall be stored in an appropriate area to prevent nitrates entering the woodland.

Residual Impacts

5.2.6 Provided mitigation and protection measures are followed, no priority or other important habitats or plant species will be affected by this development, the impact of which is **not significant.**

5.3 Amphibians

Potential Impacts

5.3.1 In the absence of mitigation, amphibians could be killed, injured or trapped during site clearance or construction. The site is considered to be of low suitability for amphibians, therefore impacts would be of minor significance and unlikely to occur.

Mitigation and Compensation

5.3.2 To ensure the protection of amphibians, the following reasonable avoidance measures shall be employed:

- The existing vegetation is to be kept at its current very short length prior to construction to ensure it remains unsuitable for amphibians.
- Habitat clearance works will be undertaken during the spring/summer season (March to mid-June) (i.e., when temperatures are consistently above 5°C) when great crested newts are more likely to enter into/be present within aquatic habitat for breeding, and in order to avoid the more sensitive hibernation period (avoiding November to February, inclusive).
- All trenches/footings/foundations etc will be excavated individually and back filled immediately after where possible. Where this is not possible, excavations will be covered overnight to prevent great crested newts becoming trapped within the excavation, or shall be fitted with a shallow ramp to allow animals to escape.
- All trenches and footings should be checked each morning for the presence

of trapped amphibians.

- Stock piles of loose materials and waste spoil shall be stored on existing areas of short grassland away from the woodland edge.
- Should any great crested newts be found on site all works shall cease while a suitably qualified ecologist is contacted for advice.

Residual Impacts

5.3.3 Once mitigation measures are taken into account, the impact of the scheme shall be **negligible.**

5.4 Bats

Potential Impacts

5.4.1 In the absence of mitigation, impacts could include the disruption of bat roosts, commuting corridors and foraging habitat through inappropriate lighting. Impacts would potentially be of moderate significance at the site level.

Mitigation and Compensation

5.4.2 Trees which have been identified as offering bat roost suitability shall be retained within the scheme and protected during construction in accordance with the detailed arboricultural package. No tree surgery work shall be undertaken upon these trees. Where works are absolutely necessary, these shall not be undertaken without a prior inspection completed by a suitably licenced bat ecologist.

5.4.3 Artificial light spill upon the vegetated boundaries shall be avoided to allow the use of these areas as a foraging resource and commuting route for bats. All artificial lighting used within the scheme shall comply with ILP Guidance Note 08 / 18 Bats and Artificial Lighting in the UK.

Residual Impacts

5.4.4 The overall impact of the scheme will be **negligible**.

5.5 Mammals

[redacted]

Residual Impacts

5.5.3 Once mitigation measures are taken into account, the overall impact of the scheme will be **negligible.**

5.6 Breeding Birds

Potential Impacts

5.6.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bird nest.

Mitigation and Compensation

5.6.2 All existing trees and woodland are to be retained. Where any minor clearance or tree surgery works are necessary, these shall be completed outside the nesting season *(season: March-August, although pigeons may nest all year)* or shall be checked prior to removal by a suitably qualified ecologist.

Residual Impacts

5.6.3 The overall impact of the scheme will be **negligible.**

5.7 Invertebrates

Potential Impacts

5.7.1 In the absence of mitigation, small areas of suitable habitat for common widespread invertebrates would be lost. Due to the species-poor nature of habitats on site, the impacts would be of very minor impact magnitude but certain to occur.

Mitigation and Compensation

5.7.2 The proposed landscape scheme shall include compensatory areas of wildflower grassland seeding, as well as native hedge planting.

5.7.3 All valuable invertebrate habitat such as the mature oak trees and adjacent woodland shall be retained and protected within the scheme.

Residual Impacts

5.7.4 The overall impact of the scheme will be **negligible**.

5.8 Dormice

Potential Impacts

5.8.1 The surrounding woodland contains favoured food plants and is functionally connected to other areas of woodland in the local environment. The construction zone itself however contains no suitable habitat.

Mitigation and Compensation

5.8.2 All surrounding tree lines and woodland shall be retained within the scheme. Full details of protection of these features is detailed within the accompanying arboricultural report.

Residual Impacts

5.8.4 The overall impact of the scheme will be **negligible**.

5.9 Future Baseline

5.9.1 The site is subject to grazing by horses, sheep and alpacas, therefore, the future baseline is predicted to remain as during the initial habitat assessment provided that grazing continues.

6.0 ECOLOGICAL ENHANCEMENTS

6.1 The design of the proposed development includes ecological enhancements for the benefit of wildlife to ensure compliance with *Local Planning Policy* and the emerging *Environment Act 2021* which mandates a minimum 10% net gain in biodiversity across all development sites. Ecological enhancements which will be included as part of development proposals include.

- *The use of native seed and fruit bearing species within new hedgerows to provide a foraging resource for birds and invertebrates.*
- *Control of bracken within the southern section of the site, with the sward allowed to naturally regenerate or over-seeded with a suitable semi-shade wildflower mixture.*
- *Incorporation 3no. general purpose bird boxes (such as Vivara Pro Seville 32mm nest box) installed to the northern aspect of boundary trees.*
- *2no. crevice and 1no. cavity bat boxes (such as those manufactured by Greenwoods Ecohabitat) installed to the southern aspect of surrounding trees.*
- *Creation of 2no. log piles c. 1m^3 within the boundaries of the site to provide a habitat for amphibians, reptiles and invertebrates. Log piles shall include areas of buried wood as a larval resource for stag beetle.*

7.0 CONCLUSIONS

7.1 The main body of the site is dominated by species-poor grassland, access via a bare earth track. The tree lines and woodland found to the margins of the site are of high ecological value and shall be retained and protected within the scheme.

7.2 The proposed construction zone is located within the Sussex North Water Supply Zone. A water neutrality statement accompanies this application which details how water neutrality can be achieved. Proposals shall not have a negative impact upon any other statutory or non-statutory protected site due to the intervening distances and small scale of the proposals.

7.3 Preliminary roost assessment of the trees noted various features which were considered to confer bat roost suitability. It is understood that these trees shall be retained and protected during construction and unlit during operation therefore no impacts upon these trees or bat roosts therein are predicted.

7.4 The site also offers some suitable habitat for amphibians, small mammals, invertebrates, dormice and breeding birds. Avoidance and mitigation measures have been built into the design of the scheme in accordance with the mitigation hierarchy and BS42020: 2013. These measures shall ensure that works avoid sensitive areas of habitat, in accordance with the mitigation hierarchy.

7.5 Once avoidance, mitigation and compensation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible and non-significant.**

7.6 Proposed ecological enhancements shall result in creation of a variety of habitats on site and Biodiversity Net Gain in accordance with local and national planning policy.

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Table No. 05 – Species List for Habitat Parcels

Other Lowland Acid Grassland

Common Name	Scientific Name	DAFOR
Annual Meadow grass	*Poa annua*	**O**
Bramble	*Rubus fruticosus*	**O**
Common Bent	*Agrostis capillaris*	**D**
Common Broom	*Cytisus scoparius*	**LD**
Common Daisy	*Bellis perennis*	**O**
Common Nettle	*Urtica dioica*	**LA**
Creeping Buttercup	*Ranunculus repens*	**LA**
Creeping Thistle	*Circium arvense*	**LA**
Curled Dock	*Rumex crispus*	**LA**
Germander Speedwell	*Veronica chamaedrys*	**O**
Ordinary Moss	*Brachythecium rutabulum*	**D**
Perennial Rye-grass	*Lolium perenne*	**O**
Red Fescue	*Festuca rubra*	**F**
Ribwort Plantain	*Plantago lupulina*	**O**
Soft Rush	*Juncus effusus*	**LA**
Thyme-leaved speedwell	*Veronica serpyllifolia*	**A**
Tormentil	*Potentilla erecta*	**D**
Water Mint	*Mentha aquatica*	**LA**
Yorkshire Fog	*Holcus lanatus*	**A**

Line of Trees

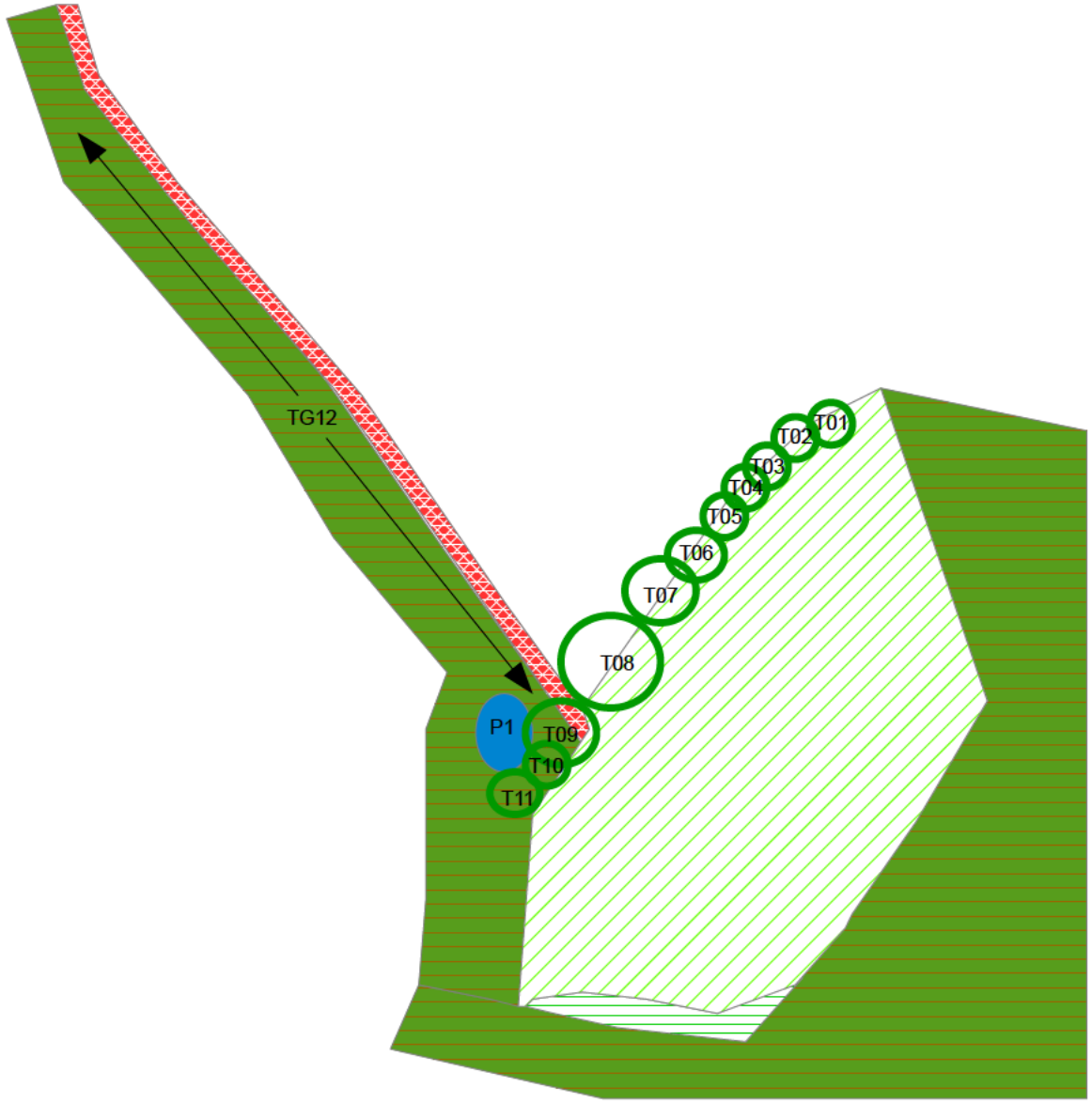
Common Name	Scientific Name	DAFOR
Bramble	*Rubus fruticosus*	**O**
Elder	*Sambucas nigra*	**O**
Goat Willow	*Salix caprea*	**R**
Hawthorn	*Crataegus monogyna*	**O**
Hazel	*Corylus avellana*	**F**
Oak	*Quercus robur*	**D**

Lowland Mixed Deciduous Woodland

Common Name	Scientific Name	DAFOR
Alder	*Alnus glutinosa*	**LD**
Ash	*Fraxinus excelsior*	**O**
Blackthorn	*Prunus spinosa*	**F**
Hawthorn	*Crataegus monogyna*	**F**
Hazel	*Corylus avellana*	**A**
Holly	*Ilex aquifolium*	**R**
Oak	*Quercus robur*	**D**

Pear	*Pyrus sp.*	***R***
Willow	*Salix sp.*	***LD***
Ground Flora		
Bluebell	*Hyacinthoides non-scripta*	***D***
Bramble	*Rubus fruticosus*	***F***
Cleavers	*Galium aparine*	***O***
Common Nettle	*Urtica dioica*	***O***
Dogs Mercury	*Mercurialis perennis*	***LD***
Germander Speedwell	*Veronica chamaedrys*	***R***
Ground Ivy	*Glechoma headeracea*	***O***
Primrose	*Primula vulgaris*	***F***
Sedge	*Carex sp.*	***O***
Wood Avens	*Geum urbanum*	***O***
Wood Speedwell	*Veronica montana*	***R***

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally



Key:

= Other Lowland Acid Grassland

= Lowland Mixed Deciduous Woodland

= Unsealed Surface

= Bracken

= Eutrophic Standing Water

= Line of Trees

N

50m

Figure No. 01 – Site Habitat Plan
Limekiln Farm, Broadwater Lane, Copsale

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Appendix A – Site Photographs

Image 01 – View across the proposed construction zone looking south-west.

Image 02 – View across the proposed construction zone looking north-east.

Image 03 – Small area of bracken to the southern section of the field parcel.

Image 04 – Proposed pond location, within an area subject to seasonal inundation.

Image 05 – Example of the adjacent woodland, much of which is classified as Ancient.

Image 06 – Existing access track with narrow strip of woodland adjacent.

Image 07 – Pond P1, assessed as offering below average habitat suitability for GCN.

Image 08 – Mature oak tree within the tree line, one of many trees which contain potential roost features on site.