Biodiversity Mitigation and Enhancement Plan

Mr Alex Turner

Corner Farm
Purton Stoke
Wiltshire
SN5 4JG

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Cotswold Environmental Ltd

Office address: Wateredge, Fostons Ash, The Camp, Stroud Gloucestershire GL6 7ER

T: 07557539979
E: info@cotswoldenvironmental.co.uk
W: www.cotswoldenvironmental.co.uk

This report has been prepared to set out ecological mitigation and enhancement measures during construction works at Corner Farm, Purton Stoke, with a view of safeguarding protected species and habitats. Cotswold Environmental Ltd accept no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

Methods used to prepare this report, including those carried out in the field followed The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

Report Author:	Tom Charlton MSc MRSB. Director and Consultant Ecologist, Cotswold Environmental Ltd.
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1 INTRODUCTION

1.1 This document has been prepared to set out ecological mitigation and enhancement measures during construction works and operational stages at Corner Farm, Purton Stoke, with a view of always safeguarding protected species and habitats. The mitigation measures set out within this report are considered proportionate in relation to the scale of the development and risks to protected species.

1.2 Cotswold Environmental Ltd were commissioned in October 2023 to produce a Biodiversity Mitigation and Enhancement Plan for a proposed development at Corner Farm, Purton Stoke, Wiltshire. This document should be read in conjunction with the following document:

- Cotswold Environmental Preliminary Ecological Appraisal dated September 2023 (Report No. CE001049_V2).

1.3 The National Planning Policy Framework (NPPF) (July 2021) sets out the government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity[1]. 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.

1.4 All survey and assessment work were completed in accordance with official assessment guidelines[2] and largely followed that recommended by the Chartered Institute for Ecology and Environmental Management (CIEEM) [3] and follows the British Standard Code of Practice[4].

Relevant Legislation

The Conservation of Habitats & Species Regulations 2017 (the Habitat Regulations) (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017 and

[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf
[2] Collins J (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn. Bat Conservation Trust, London.
[3] CIEEM (2017) Guidelines for Ecological Report Writing. CIEEM, Winchester.
[4] British Standards Institution (2013) BS 42020:2013. Biodiversity – Code of practice for planning and development. British Standards Institution, London.

extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the and the Conservation (Natural Habitats &c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

Reptiles

All native British species of reptile (of which there are 6) are listed in Schedule Five of the Wildlife and Countryside Act 1981 (as amended) and as such are protected from deliberate killing, injury or trade. Therefore, where development is permitted and there will be a significant change in land use, a reasonable effort must be undertaken to remove reptiles off site to avoid committing and offence. The same act makes the trading of native reptile species a criminal offence without an appropriate licence.

Great Crested Newts

Great crested newts and their habitats receive protection under The Conservation of Habitats and Species Regulations 2017 (as amended). This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under such legislation it is an offence to:

– deliberately kill, injure or capture (or take) great crested newts;
– deliberately disturb great crested newts;
– deliberately take or destroy the eggs of great crested newts;
– recklessly disturb great crested newts while it is occupying a structure of place which is uses for shelter or protection or obstruct access to their places of shelter or protection;
– damage or destroy a breeding site or resting place of great crested newts;
– possess or transport a great crested newt or any part of a great crested newt, unless acquired legally;
– sell (or offer for sale) or exchange great crested newts or parts of great crested newts.

Badger

Badger is protected in Britain under the *Protection of Badgers Act 1992* and *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended).

The legislation affords protection to Badgers and Badger setts and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

Birds

All common wild birds are protected under The Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird

Certain rare breeding birds are listed on Schedule 1 of The Wildlife and Countryside Act 1981 (as amended). Under this legislation they are afforded the same protection as common wild birds and are also protected against disturbance whilst building a nest or on or near a nest containing eggs/unfledged young.

2 Site Assessment Overview and Risk of Impacts

2.1 A Preliminary Ecological Appraisal was undertaken during July 2023 by Cotswold Environmental Ltd, providing baseline data used to inform this document. A summary of onsite habitats is provided below:

Aquatic Habitat Suitability

2.2 One pond, scoring a HSI value of 0.71 – good suitability to support GCN – is located immediately to the south the proposed camp siting. This pond features an existing decking area and brick-built camp fire. No further ponds were identified onsite, though and additional 12 ponds were identified within a 500 m radius of the site boundary through use of the MAGIC website. No loss impacts to these waterbodies are anticipated as part of the proposed works.

Terrestrial Habitat Suitability

2.3 The site is dominated by a homogenous improved grassland landscape maintained to a short sward height of 10-15 cm. Two dead trees as well as a single hawthorn shrub occur adjacent to exiting pond In addition, mature native species-rich hedgerows and trees are present at site margins as well as at the site entrance, and a young woodland copse at the north-western site boundary.

2.4 No non-native/invasive Schedule 9 plants were identified during the survey effort.

Responsibilities

2.5 The developer is legally responsible for ensuring no unlawful acts are committed throughout construction works and during the operational phase, and that planning conditions set by the Local Planning Authority (LPA) are fulfilled.

2.6 Contact details for the appointed ECoW will be made available to site workers and contractors as requested or required. A hard copy of this document will be kept on site at all times and site workers will be made aware of its location and/or who to contact in order to obtain a copy of, or review the Plan as required.

Contact Details for Site Manager

Name:.....

Tel:.....

Email:.....

Date:.....

2.7 All ecology works described in this Plan will be carried out under the guidance of the appointed Ecological Clerk of Works (ECoW):

Contact Details for appointed Ecological Clerk of Works

Name:.....

Tel:.....

Email:.....

Date:.....

2.8 Any breaches of the requirements of this plan will be reported to the appointed ECoW by the Site Manager or site workers as soon as practicable. Where necessary, the ECoW and/or Developer will report any breaches to Wiltshire Council and/or Natural England (NE).

2.9 The Developer will ensure that any remedial measures proposed are approved by the relevant LPA and where appropriate NE, prior to them being carried out on site.

3 Reasonable Avoidance Measures (RAMs)

3.1 The following Preconstruction and Construction Mitigation Measures/RAMs are designed to reduce risks to protected species including bats, badger, reptiles, amphibians, hedgehog and nesting birds by avoiding the creation of potential refuge and to ensure that protected species are safeguarded at all times during development works. RAMs will be implemented both during site clearance and throughout the construction phase. Where considered necessary, species-specific RAMs are also provided.

Biodiversity Protection Zones

Wildlife Sites

3.2 The proposals are considered small scale and no impacts to local nearby statutory or non-statutory sites are anticipated as a result of the proposed development works.

Onsite Habitats

3.3 Whilst the installation phase of works is considered small scale, to further reduce risks to protected species a protective buffer zone will be established around retained habitats of ecological value prior to the commencement of installation, notably a pond and surrounding trees occurring immediately to the south of the proposed Shepard's Hut installation which offer value for reptiles and amphibians, as well as commuting and foraging habitats to local bat populations. Nearby trees and the pond will be protected thorough the installation of a 5 m (where practical) temporary buffer zone using post and red-and-white barrier tape. Once installed, Protective Buffer Zones will remain in place throughout the installation/construction period. No vehicles will enter these areas and they must not be utilised for storage of materials in order to prevent damage.

Water Pollution

3.4 A suitably qualified nominated worker will undertake relevant machinery checks, which may involve installing/changing drip trays for pumps and other associated machinery. Regular checks must also be carried out for oil leaks. Any oil will be appropriately disposed of. Materials associated with the project must be stored away from watercourses or long vegetation – ideally on flat hard standing habitat. If this is not possible, all materials and equipment should be securely stored to prevent run-offs from entering the local waterways in the event of a flood.

3.5 The risk of accidental pollution must be reduced by following best practice to protect a nearby pond present immediately to the south of the siting of two Shepard's huts. Below, are some (not all) guidelines that should be considered during the construction phase: PPG6: Environment Agency's Pollution Prevention Guidelines[5] and PPG5: Works in, Near or Liable to Affect Watercourses[6]. The new series of Guidance for Pollution Prevention (GPP)[7] should also be strictly adhered to throughout the operation. It is recommended that ahead of works commencing, a contingency plan is designed to ensure that if an unlikely pollution incident occurs, methodology can be followed to minimise risks to the environment. Further relevant information can be found in the GPP21: Pollution Incident Response Plans[8].

GENERAL RAMs – Construction Phase

Site Induction

3.6 Immediately prior to any pre-construction works starting onsite, all site personnel will receive a toolbox talk from the appointed Ecological Clerk of Works (ECoW). This will include, but is not limited to, information pertaining to ecological constraints on site, implementation of biodiversity buffer zones, identification of protected species, and legal protection afforded to protected species as well as safe working methods which must be followed at all times.

Habitat Management

3.7 Grassland and other site vegetation must be maintained at a height of 10-15 cm or below both prior to and throughout the development phase to discourage wildlife from taking refuge within the zone of impact. Should grassland be allowed to become overgrow, more stringent levels of mitigation will be required – a suitably qualified ecologist must be contacted for further advice.

Timings of Work

3.8 Taking into consideration the low value of habitats within the zone of impact, for installation of the Shepard's Huts there are no seasonal constraints relating to works providing grassland doesn't become

[5] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/485215/pmho0412bwfe-e-e.pdf

[6] https://www.malvernhills.gov.uk/documents/10558/125552/PPG5+-+Works+in+or+near+watercourses.pdf/47c17455-44a4-4499-bd40-391a03d253d7

[7] http://www.netregs.org.uk/media/1303/gpp-5-works-and-maintenance-in-or-near-water.pdf

[8] http://www.netregs.org.uk/media/1436/gpp-21-final.pdf

overgrown. Furthermore, installation and construction works will be restricted to daytime hours to safeguard nocturnal wildlife from noise and light pollution.

Material Storage

3.9 It is advisable that only building products to be used on the day are brought and stored on the site. If building products need to be stored onsite (e.g. overnight or for more than one day), they will be stored on pallets or retained in bags on pallets to ensure that refuges are not created that may attract wildlife.

3.10 All holes created during the construction period (e.g. to lay a concrete pad) will be filled in and finalised on the same day so as not to leave any pitfall traps. If this is unavoidable, they must be left with a sloping end or ramp to allow wildlife that may fall in to escape.

3.11 Any spoil resulting from excavations will either be spread and compacted within the area on the same day or be removed from the construction area on the same day - it will not be left in loose heaps overnight. A member of site personal from the contracting team will be nominated to ensure that these measures are implemented.

Encountering Protected Species

3.12 Should a protected species (or suspected protected species) be encountered at any point prior to or during the construction phase, all works must cease immediately and the nominated ECoW notified for further advise.

3.13 Contractors are forbidden to handle any protected species discovered during the development process.

RAMs – Operational Phase

3.14 During the operational phase, two Shepard's Huts will provide accommodation for a maximum of 4 persons. The lodgings will be dog-friendly, and guest will have access to utilise existing decking and a fire place installation adjacent to the pond.

Water Pollutant Prevention Measures

3.15 Measures must be taken to minimise potential impacts from pollutants entering the adjacent pond during the operation phase of the development. The following measures will be taken:

- Information pack will be provided to guests identifying the ecological importance of the pond.
- Signage will be erected at the pond edge stating dogs are prohibited from entering the water to avoid both disturbance and introduction of potential contaminants. This will also be stated within Terms and Conditions at the booking stage.

- No herbicides are to be used within the vicinity of the pond during any ongoing site management works.
- No further post development impacts from pollution are predicted.

Nocturnal Lighting Measures

3.16 For safety reasons, nocturnal lighting will be required as part of the development. As suitable bat habitat occurs within the nearby surrounding environment, operational lighting will be designed so as to minimise light spill and a low-level lighting scheme implemented to avoid indirect disturbance to bats and other nocturnal animal species that may exploit local habitats. Any external lighting installed as part of the development must be used in accordance with Guidance Note 08/23: Bats and Artificial Lighting[9].

3.17 When selecting appropriate external lighting, the following specifications must be taken into consideration:

- Any external lighting incorporated into the proposed development should be LED luminaires due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- Lighting units must be of a fixed downward position to avoid light spillage. Floodlights, or units that tilt in an upwards or sideways position must not be used.
- The unit will be fitted with a low wattage LED bulb (maximum 5W) with a warm white colour temperature not exceeding 2700K. All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used[10]
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats[11].
- All lighting will be triggered by PIR motion sensors to limit disturbance.
- Light spill must be controlled and if lighting is required at night, hooded shields must be fitted to prevent spill onto nearby habitats that are likely to support wildlife, notably the pond and nearby trees occurring to the south of the zone of impact.
- Lighting must not be directed towards bat, bird, or hedgehog compensation features once installed.

3.18 With sensitive use of lighting during construction, no residual impacts are anticipated as a result of the proposed conversion of the outbuilding.

[9] https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/

[10] Bat Conservation Trust & Institute of Lighting Professionals (ILP) 2018. *Guidance Note 8: Bats and artificial lighting in the UK*. Bats and the Built Environment Series.
[11] Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation*

SPECIES-SPECIFIC MITIGATION MEASURES

Nesting Birds

3.19 Best practice would be for hedgerow trimming to be undertaken outside the bird nesting season, which generally runs from late February to late August. If works commence within the bird nesting season the appointed ECoW will inspect these hedgerows ahead of works commencing. Works must not be initiated until the ecologist has confirmed that no nesting birds exist within the area of impact. If an active bird nest is discovered, an exclusion zone must be put in place (minimum 5 m), and works must be halted in that area until the nest is no longer active and young have fledged. **Works must not commence without confirmation from a suitably qualified ecologist that no nesting birds are present within the area of impact.**

Summary – Nesting Birds

Species	Timing Constraints	ECoW Required	Other
Nesting Birds	Yes (see Table 1)	Yes (Feb-August)	Toolbox talk, pre-works assessment prior to hedgerow trimming by ECoW

Bats

3.20 No direct impacts to bat roosts are anticipated as part of the proposals, with risks further reduced thorough the installation of biodiversity protection zones around trees located at the pond edge. Indirect impacts to potential roosting features and other nearby suitable foraging/habitats will be mitigated thorough sensitive use of nocturnal lighting as described within this document.

Summary - Bats

Species	Timing Constraints	ECoW Required	Other
Bats	No	No	Protection zones established around trees during construction phase to prevent impacts. Nocturnal Lighting Measures strictly adhered to.

Badger

3.21 No evidence of badger setts or additional badger activity onsite was discovered during the survey effort, and habitats within the zone of impact offer negligible potential for badger setts. Mitigation measures for this species comprises the installation of sloping ramps within any holes or foundations dug in association with works to avoid entrapment.

Summary - Badger

Species	Timing Constraints	ECoW Required	Other
Badger	No	No	Ramps to be implemented within holes/foundations. Nocturnal Lighting Measures strictly adhered to.

Hedgehog

3.22 Habitats onsite suitable for hedgehog comprise boundary vegetation including hedgerows, and open grassland of the zone of impact would offer value for commuting/foraging. Mitigation measures for this species comprises the installation of sloping ramps within any holes or foundations dug in association with works to avoid entrapment.

Summary – Hedgehog

Species	Timing Constraints	ECoW Required	Other
Hedgehog	No	No	Ramps to be implemented within holes/foundations. Nocturnal Lighting Measures strictly adhered to.

Reptiles and Amphibians

3.23 No loss of suitable terrestrial or aquatic habitat are anticipated as a result of the development. Indirect impacts via disturbance and pollution during installation and operational phase will be mitigated through implementation of biodiversity protection zones, pollution mitigation measures, and sensitive use of nocturnal lighting as described within this document.

Summary – Reptiles and Amphibians

Species	Timing Constraints	ECoW Required	Other
Reptiles and Amphibians	No	No	Water pollution prevention measures strictly adhered to. Nocturnal Lighting Measures strictly adhered to. Protection zone established around pond during construction phase to prevent impacts.

Biodiversity Enhancement Measures

BIRDS

3.24 The wider site grounds are considered to hold good value for nesting activity by an assemblage of bird species due to the presence of hedgerows, shrubs and mature trees. As such, there are various options available with regards to bird nesting enhancements. Two Bibao woodcrete nest boxes (or similar) will be installed upon mature trees located at the north-western site boundary. These boxes are suitable for use by an assemblage of small garden bird species and provide a good level protection from potential predators and adverse climate. Further information pertaining to Bibao bird boxes can be found at https://www.wildcare.co.uk/bilbao-nest-box.html

For maximum success, our recommendations are as follows:

- Bird boxes be fitted upon mature trees, located away from the siting of the Shepard's Huts where disturbance would be likely.
- Following British Ornithology Trust guidelines for mounting nest boxes, the boxes will be positioned no lower than 2m from ground level and preferably above 3 m to offer protection from both ground level disturbance as well as from potential threats.
- The proposed placement of the bird boxes will allow for a clear flight path, without obstruction to the nest box entrance. They shall be installed facing a north or north-eastly direction to offer protection from prevailing winds and rain and should be slightly tilted in a downwards position to offer further weather protection.
- Further information regarding nest boxes can be found at https://www.bto.org/how-you-can-help/providing-birds/putting-nest-boxes-birds/make-nest-box

Note: When the nest box is occupied, all common wild birds are protected under The Wildlife and Countryside Act 1981 (and as amended). Under this legislation it is an offence to:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird while it is in use or being built
- Take or destroy the egg of any wild bird

BATS

3.25 Two bat boxes will be affixed to trees of the deciduous woodland copse occurring to the north-western site boundary, using either Schwegler 1FF box (or similar) or Schwegler 2F box (or similar), both of which are known to be used by a variety of bats including *Nyctalus*, *Pipistrellus*, *Myotis* and *Plecotus* species. Furthermore, these woodcrete-built bat boxes have been proven to be more successful as bat mitigation than traditional timber-built bat boxes[12].

The following considerations have been given when selecting the positioning of bat boxes on site:

- The chosen placement is of a robust nature, reducing possibility of the bat box falling to the ground which could cause damage to the box, loss of a roost, or disturbance, injury or death to bats.
- The area will be absent of ivy cover. This is important, as there is risk that in time, ivy will grow over the box and cause it to become blocked at the entrance. It is further recommended that climbing plants are not allowed to grow up towards the bat box as this may eventually block entry.
- The surroundings are free from obstruction, allowing for a more direct flight path into the bat box.
- The location is safely accessible, should the bat box need to be repaired, replaced or monitored by bat-licensed personnel.
- The position of the bat boxes ensure they are located away from the proposed camping area in order to minimise potential disturbance to roosting bats.
- Following Bat Conservation Trust guidelines, the bat boxes shall be installed a minimum of 4 m above ground and positioned to ensure that it will receive direct sunlight for at least part of day, in a south, east or south-east facing direction. They must not face north or north-east.

[12] 1. Aughney, T. (2008). An investigation of the impact of development projects on bat populations: Comparing pre-and post-development bat faunas. Irish Bat Monitoring Programme. Bat Conservation Ireland, www.batconservationireland.org

Note: Once a bat box is occupied, it is an offence to disturb any bat when it is roosting, or to kill, injure or handle a bat without the appropriate licence granted by Natural England. If a sick or injured bat is found, the local Wildlife Trust or bat group should be contacted for further advice. If maintenance of the bat boxes is required, a suitably licensed bat worker or local bat group must be consulted.

HEDGEHOG

3.26 Whilst the site grounds were not considered as optimal value for hedgehog due to the extensive short-mown grassland, the inclusion of two artificial hedgehog shelters within boundary habitats would enhance the site for this species. Therefore, two hedgehog shelters will be installed within a sheltered and shaded position along a linear feature such as a fence or hedgerow. and must be situated away from roads and tracks utilised by vehicles. Suitable locations at Corner Farm would be within hedgerows located at the eastern as western site boundaries.

3.27 **Installation locations for the above biodiversity enhancement measures are shown in Figure 1: Biodiversity Enhancement Map.**

REPTILES AND AMPHIBIANS

3.28 An existing pond is currently poorly connected to the wider landscape due to immediately surrounding habitats comprising short-mown improved grassland. To improve connectivity for reptiles and amphibians between the onsite pond and an existing hedgerow occurring approximately 18 m to the east, as well as increase foraging opportunities for local populations, a strip of rough grassland measuring a minimum of 4 m wide will be left unmanaged as part of the field compartment mowing regime, as showin in per Figure 1, which will include grassland occurring immediately to the south of the pond.

Compliance Reporting

3.29 Following the completion of the above works, the nominated ecologist will prepare a letter of compliance in relation to this document, which will provided to the developer. A copy of this letter can be provided to Wiltshire Council at their request. Photographic evidence and copies of toolbox talks will be included as necessary.

3.30 Where additional ecological surveys are required to support implementation of this document, these will be recorded as necessary in stand-alone reports and provided to the developer for circulation to Wiltshire Council for comment and record.

SELECTED REFERENCES

- Baker, J., Beebee T., Buckley, J., Gent, A. and Orchard, D. (2011). *Amphibian Habitat Management Handbook. Amphibian and Reptile Conservation*, Bournemouth.

- British Standards Institution (2013). *Biodiversity – Code of practice for planning and development*. British Standards Institution, London.

- Gent, A.H. and Gibson, S.D., *eds.* (1998) *Herpetofauna Workers' Manual*. Peterborough, Joint Nature Conservation Committee.

- Langton, t., Beckett, C., and Foster, F. (2001) *Great Crested Newt Conservation Handbook.* Froglife, Halesworth, Suffolk.

- Wildlife & Countryside Act 1981 (as amended)

- Conservation of Habitats and Species Regulations 2017 (as amended)

APPENDIX B: MAPS

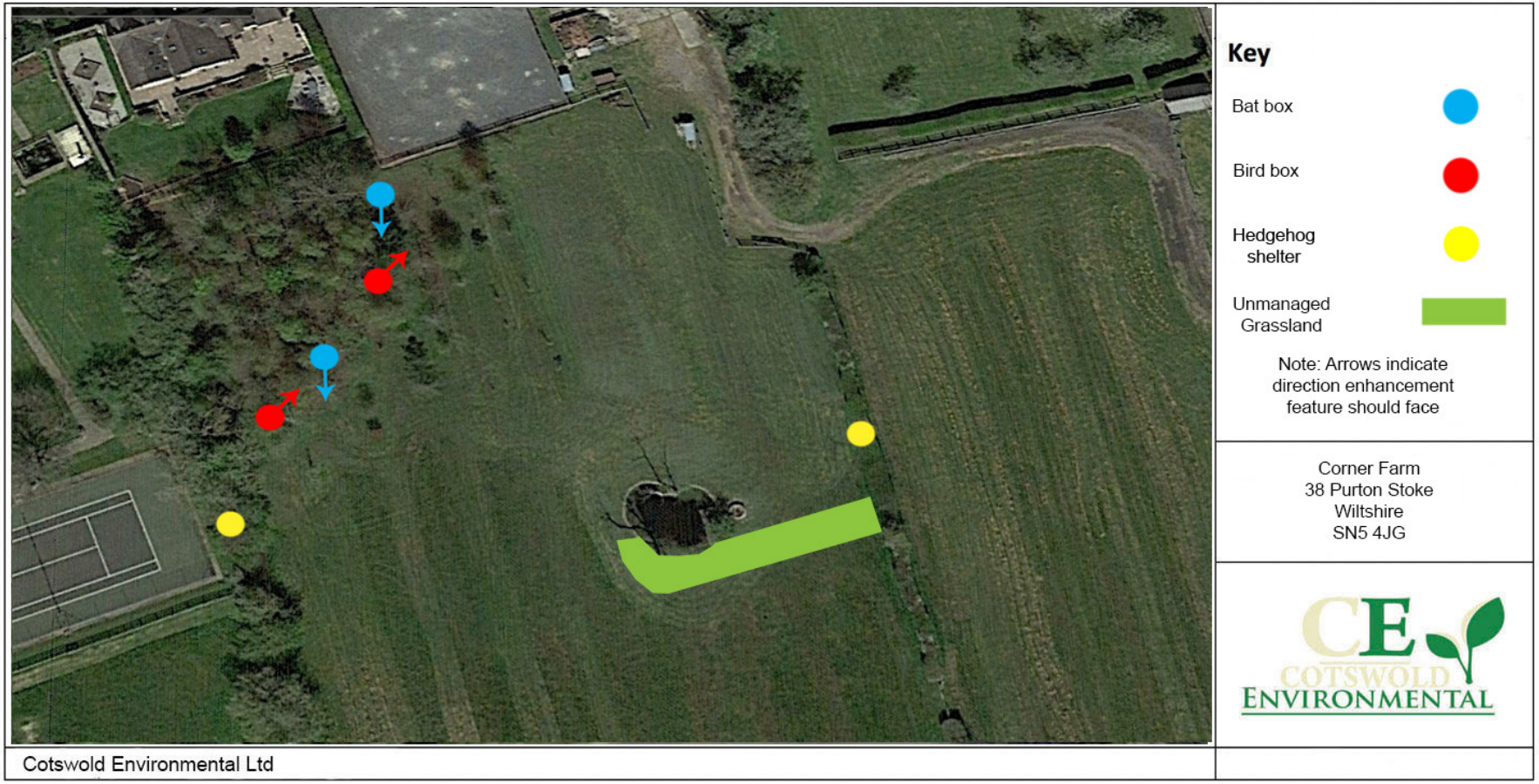

Figure 1: Biodiversity Enhancement Map