



Preliminary Roost Assessment & Preliminary Ecological Appraisal Smerill Farm, Kemble

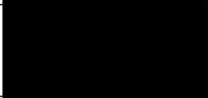
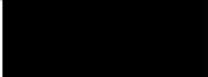
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1. Summary

To inform the proposed construction of an annexe adjacent to a small cottage it was necessary to undertake both a preliminary roost assessment (PRA) and a preliminary ecological appraisal (PEA) over this site. An ecological data search of the site and surrounding area was also commissioned.

The PRA determined that there was no evidence of bats within any structure in the immediate vicinity of the proposed annexe and no tree with the potential to support roosting bats would be negatively impacted by the proposals. However, the cottage has a Cotswold tile-stone roof with multiple opportunities for bats to roost beneath the stones; in addition, the chimney of the cottage is in poor condition and there is a partly-rotted exposed roof beam and both these features have the potential to offer roosting opportunities for bats.

The PEA determined that the small footprint of the proposed annexe is mostly upon a relatively species-diverse area of semi-improved neutral grassland and adjacent to a minor boundary feature comprising a line of largely non-native shrubs.

There is a low potential for common reptile species to be negatively impacted by the proposed works. A small area of potential breeding bird habitat (a short length of non-native shrubs) could potentially be lost to the proposed works. There is a theoretical potential for hedgehogs *Erinacus europaeus* being harmed by enabling works if the boundary feature is breached. No other protected or otherwise notable species issues are realistically foreseeable here.

The majority of these potential issues could be addressed by works being timed to avoid likely harm to protected species or by having a suitably experienced ecologist supervise any clearance works .

Should any further works be proposed, (none are currently proposed) such as modifications to the cottage, it is considered here that the only protected or otherwise notable protected species issue which needs further survey work to address is with regard to the potential of bats using the cottage : potentially roosting under the tile-stones, in the chimney and in the part-rotted beam. Thus, the cottage has a Moderate bat roost potential and will require bat roost emergence / return surveys which can commence no sooner than early May 2024.

In addition, a stone-built shed, and a byre constructed from timber and corrugated metal sheeting, may have potential to serve as bat night roosts; should any of these structures require removal or demolition they will require static bat detectors to be placed within them to record any bat usage. It is to be noted that none of these structures would be impacted by the proposed erection of the annexe.

A light pollution management strategy for the proposed annexe will be required to reduce the potential impact of the proposal upon foraging bats which may utilise the immediate area.

An ecological data search demonstrated that a notably small number of protected species records have been made within one kilometre of the survey site and that no statutory or non-statutory designated sites are present within one kilometre of the site.

For ease of description and analysis the findings of the PRA and the PEA are here combined into a single report and the entirety of the wider site within the same ownership is discussed.

2. Proposal and Remit

2.1 Proposal

It is proposed to construct an annexe to a small cottage; in addition, a small garage may also be constructed to the south of the cottage.

2.2 Remit

To undertake a PRA of the cottage, any other adjacent structures, and any trees likely to be impacted by the proposed works. This will identify any evidence of bats and the likelihood of bats roosting in these features. Such roosting bats could potentially be negatively impacted by the proposed works here.

To undertake a PEA of the proposed footprint of the annexe, the proposed location of the garage, and the immediate areas around these sites / features to determine their likely ecological value and whether there will be a requirement for additional ecological surveys there.

3. Site description

3.1 General

The survey site is located at Ordnance Survey grid reference ST998979 two kilometres north-east of the village of Kemble, in Cotswold District, Gloucestershire. It lies immediately west of the A429 public highway in the upper headwaters of the Thames valley and is within a small valley feature which is part of the upper Thames catchment.

The wider landscape is predominantly one of arable cultivation with field boundaries partly of dry stone walls and partly of hedgerows –many of the latter are managed. Small blocks of woodland are present in this landscape but few waterbodies or watercourses are present here.

The site is part of dispersed group of buildings and small paddocks which are part of the wider Smerill Farm complex with some farm buildings having been converted to dwellings but others still in use as part of a working farm. The survey site is centred on a paddock adjacent to a small cottage which was inhabited until relatively recently.

3.2 The area of the proposed works and areas immediately adjacent

3.2.1 Structures

The main structure here is a small traditionally-built two storey dwelling, here referred to as “the cottage,” constructed from mortared Cotswold limestone rubble and with a double-pitched Cotswold tile-stone roof; a small single pitch section of tile-stone roof is present over the western elevation of a kitchen extension. The ridge tiles are in good condition. The southern and eastern elevations have a 1m wide concrete surfaced walkway around their edge with a stone revetment

wall on the outer edge of the walkway; a tall Perspex roof and surround sits atop the retaining wall and is attached to the eastern and southern elevations of the cottage.

On the ground floor the cottage has one main room, a toilet and bath, a hallway leading to stairs, and a kitchen. The first floor has three bedrooms of varying size as well as a landing and several small built-in cupboards. The windows are predominantly in the western elevation (on both floors) but with two small windows in both the northern and eastern elevations. The ground floor kitchen has small windows in the southern and western elevations. All the windows and doors in the cottage are in good condition. A fireplace is present in the northern wall of the main ground floor room and the flue from this runs up to a small stone chimney which is in poor condition.

There are two roof voids: a larger one over the northern three quarters of the cottage and a smaller one over the southern quarter of the cottage.



Above: western elevation of the cottage



Above: the southern and western elevations of the cottage

Immediately north-east of the dwelling are two redundant small structures: a greenhouse and a shed, the latter constructed from mortared Cotswold stone rubble and partly-dressed stone with a single pitch corrugated metal roof and a doorway without a door. Between these structures and the cottage is an area of paved courtyard.



Above: The small stone-built shed

In the paddock immediately west of the dwelling, where the proposed annexe would be built, is a derelict byre built from corrugated metal panels over a timber framework and with a single pitch corrugated metal panel roof. The byre's entrance, in the south-eastern elevation of this structure,

has no doorway and thus is permanently open. A quantity of old hay and straw within the byre suggests that it was formerly used as a stable or other animal shelter.



Above: the byre

3.2.2 The grounds

Courtyards

To the south-west of the cottage is a small paved courtyard with several herbaceous and woody species in planters. There are also many weeds here -a mix of native and non-native species. Two large and one small concrete water troughs form much of the western curtilage of this courtyard whilst a drystone retaining wall forms its southern edge.



Above: the western courtyard

The northern boundary of the courtyard is a 2-3m tall dry-stone wall with a mix of non-native and native shrubs growing along it. This wall continues north-east adjacent to the northern elevation of the dwelling and then continues up to the northern apex of the site; for much of its length the wall forms the boundary between a pasture to its west and an open woodland area to its east. Part of the wall has collapsed.

West of the dry-stone wall is short length of post and rail fencing with young planted mainly non-native trees and shrubs along it; a five bar gate is also present within this boundary.

Paddock

The area of the proposed planning application is a section of a small paddock, much of this paddock has a pronounced south-westerly aspect; the byre (see above) is located in the western corner of this paddock. The paddock is divided from the cottage and its courtyard (as well as from a small open woodland) by the dry stone wall, shrubs and young trees described above.

The western boundary of the paddock is a post and rail fence whilst the southern boundary is a post and wire fence but with many trees and shrubs along its length.



Above: area of the northern paddock where the annexe will be built -looking south-east

3.3 The wider site

With the exception of a small area where the construction of a garage is proposed the remainder of this property lies outside the boundary of those proposed works which would require planning permission. As the majority of this area outside the proposed planning application will not be impacted by the proposed works it is described here briefly and with the purpose of providing background information only.

Garden / woodland: Although the proposed planning application is understood to not include any works within this area immediately south and east of the cottage, it was subject to survey as it lies

immediately adjacent to the cottage. Part of this area (included within the area subject to the planning application) is also described in section 5. 2 above. Comprising open secondary woodland with some planted non-native trees and shrubs there are small areas of non-native herbaceous plants and shrubs. This area merges into a small area of open woodland to the east.

Paddocks: There are two small paddocks on this property. The northernmost one, in part described above, will be impacted by the proposed application as it will be where the proposed annexe will be built; however approximately 50% of this paddock should not be impacted by the proposed works.

The other paddock lies to the west of the proposed development area and is at a lower elevation than the rest of the site; it is surrounded by dry stone walls and frequent trees and shrubs. It is likely that a small rill flows here at times of high rainfall as a culvert is present in the south of this paddock.

Driveway: There is a driveway of approximately 80 metres length running from the cottage south to a five bar gate; beyond this gate the driveway continues south to the public highway but that southern section of driveway is outside the purview of this survey. The driveway is largely an unsurfaced hardcore feature but towards the north it supports a thin species-poor grassland sward.

Stables / stores: Approximately 50m south of the cottage (and outside the area of the planning application) is a single storey range of buildings, four of which were formerly used at stables. The northernmost part of this range is a stone-built structure with a tile-stone roof whilst the other parts of the range are of breeze block but with a stone wall as their eastern elevation. Much of the western elevation in this range comprises timber facades and doors. These structures were subject to a brief protected species survey and are described in greater detail in Appendix 3 of this report.

To the immediate west of this range of buildings is an area of species-poor grassland. A small section of dry stone wall with an associated semi-mature ash tree, and a five bar gate across the driveway mark the southern edge of this property.

4. Methodology

4.1 General

As described above, the area subject to the proposed planning application comprises part of a larger holding within the same ownership. However the works to be included within the proposed planning application will impact only the northern paddock but with the cottage, its immediate curtilage, a section of dry stone wall with associated shrubs, an adjacent area of grassland, and a small part of a garden / woodland all immediately adjacent to the site of the proposed annex. Thus a detailed survey was undertaken only over the areas which could feasibly be impacted by the proposals and a less detailed and more general survey undertaken over the rest of the holding which will not be conceivably be impacted by the proposed works.

The survey was conducted over two hours on 12th October 2023. There was full access to the whole survey site, including access into all structures. Weather conditions were overcast, still and with occasional light drizzle.

The surveyor, Phil Quinn MCIEEM has over thirty-five years' experience of ecological survey and habitat assessment including with regard to all UK protected species.

4.2 Habitat survey

Habitats within the area of the proposed planning application were mapped preferentially in accordance with the UK Habitat Classification methodology (Butcher et al). However, where the UK Habitat Classification proved inadequate for recording certain habitats the protocol contained within the JNCC Handbook for Phase 1 habitat survey: A technique for environmental audit (2007) was adopted.

It is to be noted that the ability to offer fine differentiation between grassland communities is considerably poorer with regard to UK Habitat Classification and considerably better with regard to the Phase 1 methodology and thus Phase 1 terminology is preferentially used in this report. With regard to the UK Habitat Classification methodology all grassland on this site is classed as g3c Other neutral grassland.

Equally the symbology offered by the UK Habitat Classification is not adequate to display the full range of habitats and features recorded on this site and thus the site plan accompanying this report incorporates elements of the UK Habitat Classification, Phase One habitat survey, and unique site-specific symbology.

Data was also gathered during this survey which will help assist an understanding of the potential ecological impact of the proposed works, this will be assessed through the Biodiversity Net Gain Metric 4.0.

4.3 Preliminary Ecological Appraisal

With regard to protected and otherwise notable animal species the site was subject to a search for field signs, and adjacent land assessed for likely presence or absence as follows:

- Badgers. The survey included a search for distinctive field signs of this species including setts (burrow complexes), latrines, pathways and feeding signs / foraging activity.
- Birds. An assessment was made of habitat on and adjacent to the site for its potential value to breeding birds. No breeding birds could realistically be anticipated at the time of survey, thus evidence was sought for former nesting activity such as: old nests and dead juvenile birds. A search was also made for potential swift *Apus apus* nest access points in the upper parts of any structures, and also for evidence that barn owls *Tyto alba* or little owls *Athene noctua* utilise the outbuildings -such evidence would be in the form of pellets (distinctive excreted undigestible food matter) or guano (also known as “wash”) .
- Reptiles. The reptile species most likely to be recorded here - slow-worms *Anguis fragilis* and to a lesser extent grass snakes *Natrix helvetica* –could potentially still have been active at the time of survey but this could not be presumed. Thus, although suitable refugia (under which reptiles could safely bask) were searched, it is possible that some if not all reptiles that could potentially use this site would have entered hibernation or torpor within underground burrows. Thus the main element of the reptile survey was with regard to habitat quality on the site: assessing it to determine the likelihood for reptiles being present.
- Aquatic / semi-aquatic species (such as great crested newt, otter, water vole and white-clawed crayfish). A search was made on and immediately adjacent to the site for suitable habitat features (freshwater bodies and watercourses), and in the case of great crested newts, suitable terrestrial habitat. Should such habitat be present field evidence would be

sought for these species with regard to droppings (otter and water voles), burrows and feeding remains (water voles), and prints in soft substrates (otters and water voles)

In addition a great crested newt Habitat Suitability Index (HSI) survey was undertaken on cattle troughs holding water on this site. This followed the methodology detailed in Amphibian and Reptile Groups of the United Kingdom ARG UK Advice Note 5 (May 2010) as developed by Oldham *et al*(2000).

- Dormice. The habitat on and adjacent to the site was assessed with regard to the potential likelihood of dormice *Muscardinus avellarinus* being present. Where mature hazel *Corylus avellana* and areas of scrub were present these features were searched for field signs of this species (distinctively-opened hazelnuts, and nests woven amongst bramble from vegetative material).
- Hedgehogs. The habitat on and adjacent to the site was assessed with regard to its suitability to support hedgehog nest sites and foraging habitat. In addition, the distinctive droppings of hedgehogs were also sought.
- In addition the site was assessed for its likely potential to support diverse, notable, and otherwise significant invertebrate populations and whether invertebrates here are likely to offer high or low biomass for protected species dependent upon them. However, invertebrates *per se* are not protected species although some species are protected and many others considered notable.

4.4 Preliminary Roost Assessment

All structures on this site were subject to a detailed visual survey for field signs of roosting bats and to assess the suitability of these structures as potential bat roosts. In addition any trees on or adjacent to the site that had the potential to act as bat roosts were also subject to a detailed visual survey and assessment. This survey was predominantly ground-based and utilised 8 x 42 resolution binoculars. A search was made for field evidence of roosting bats such as: bats visibly roosting; droppings; feeding remains; and grease marks around potential roost access points.

Where necessary a Bosch Professional GIC120C Inspection camera (endoscope) was used to investigate small cavities within the dwelling.

The surveyor has a Natural England Level 2 survey license with regard to bats.

4.5 Ecological data search

To further help determine the value of this site with regard to the ecological interest of the wider area, and to anticipate any possible protected species issues not identified from the site visit, an ecological data search was commissioned for an area within a 1km radius around the property for all data concerning protected and otherwise notable species and with regard to statutory and non-statutory designated sites. This data was requested from the Gloucestershire Centre for Environmental Records (GCER).

5. Results

5.1 Habitats and plant communities

Proposed development area

The northern paddock is predominantly a species-poor semi-improved grassland where false oat-grass *Arrhenatherum elatius* is dominant and Yorkshire fog *Holcus lanatus* is abundant. Hogweed *Heracleum sphondylium*, yarrow *Achillea millefolium*, barren brome *Bromopsis sterilis*, meadow buttercup *Ranunculus acris*, cocksfoot *Dactylis glomerata*, perennial rye-grass *Lolium perenne*, sorrel *Rumex acetosa* and ground ivy *Gelchoma hederacea* are all common here.

However the part of this paddock where the proposed annexe is located has a semi-improved neutral grassland sward where common bird's-foot trefoil *Lotus corniculatus*, rough hawkbit *Leontodon hispidus*, common rest-harrow *Ononis repens* and lady's bedstraw *Galium verum* are all present in small quantity.

With regard to the UK Habitat Classification the whole paddock is g3 Neutral grassland

The western boundary of this paddock is a post and rail fence and thus of no ecological value. The south-western boundary is a fence with a line of semi-mature trees and bushes. Most prominent here is a clonal group of semi-mature aspen trees *Populus tremula* but sycamore is also very common; grey poplar *Populus x canescens*, crack willow *Salix fragilis*, elder and a species of prunus *Prunus* sp. are also present here but in small quantity. Nettle *Urtica dioica* is abundant at the base of these trees and shrubs and spreads out into the western part of the paddock.

Land and features adjacent to the proposed development area

The northern half of the northern paddock is a species-poor semi-improved grassland dominated by false oat-grass and with a very low diversity and abundance of herb species; no species of any note were recorded here.



Above: northern half of the northern paddock -looking south

The garden / woodland area to the south and east of the proposed development area is of low botanical interest, comprising a mosaic of highly modified open secondary woodland and planted coniferous woodland with a species-poor field layer (dominated by ivy *Hedera helix* and common grass species). Ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus* are the main deciduous tree species and goat willow *Salix caprea* is locally common here but non-native species such as Monterey cypress *Cupressus macrocarpa* are common. Native shrubs such as hazel, hawthorn *Crataegus monogyna* and elder *Sambucus nigra* are present here in small quantity and there is much wild clematis *Clematis vitalba* and some bramble *Rubus fruticosus* agg. It is to be noted that very little of this garden / woodland area will be impacted by the proposed works: only a small area in the west of this feature will potentially be impacted as a garage is proposed for that location.

With regard to the UK Habitat Classification this is w1h5 Other woodland: mixed, mainly broadleaved

The courtyard areas adjacent to the cottage have a species-poor flora, that to the east of the cottage has a very sparse vegetation whilst that to the west of the cottage is more diverse but consists of an ephemeral / short perennial vegetation of both common native and non-native herbs which mainly grow within the cracks in the paving. Typical species recorded here include dandelion *Taraxacum officinale* agg., ash seedlings, herb benet *Geum urbanum*, love-in-a-mist *Nigella damascena*, columbine *Aquilegia vulgaris*, and American willowherb *Epilobium ciliatum*.

With regard to the UK Habitat Classification this is u1f Sparsely vegetated urban land

The boundary of planted shrubs and trees between the northern paddock and the cottage is in part a section of dry stone wall and in part a post and rail fence. The stone wall locally has much ivy growing along it. The planted shrubs and young trees are ginkgo *Ginkgo biloba*, spindle *Euonymus europaea*, holly *Ilex aquifolium*, hazel (ornamental variety), elder, sycamore, a Prunus, and several non-native species which could not be identified.

The grassland along the driveway is typically low in herb diversity –daisy *Bellis perennis*, ribwort *Plantago lanceolata*, greater plantain *Plantago major*, perennial rye-grass *Lolium perenne*, annual rye-grass *Poa annua*, and dandelion predominate here.

With regard to the UK Habitat Classification this is g3 Neutral grassland

Other parts of the wider site within the same ownership

N.B. These areas will not be impacted by the proposed planning application

Broadleaved woodland is present on the eastern edge of the site and merges into the garden / woodland area. As described above with regard to the garden / woodland area this habitat is of low botanical interest with a species-poor field layer dominated by ivy. Ash is the predominant deciduous tree species here but sycamore is also common and goat willow is locally common. The shrub layer comprises young specimens of ash, sycamore and willow but also some hazel, hawthorn and elder along with much wild clematis and some bramble.

Within the northern part of this woodland there is a large glade of species-poor grassland.



Above: glade within the woodland area

The woodland area (part of the garden / woodland area described above), which will not be impacted by the proposed works, has an open structure and, as has been outlined above, is a mosaic of self-sown deciduous and planted coniferous trees and shrubs with species-poor grassy glades. This area is small and has been heavily modified by its being in part managed as a wooded garden feature. No plant species of any note were recorded here and the broadleaved element of the woodland is likely to have developed relatively recently from scrub which colonised a previously open site.

The grassland areas within the woodland have a similar structure botanical to the northern half of the northern paddock and thus are of no botanical interest.

The western paddock has a species-poor semi-improved grassland sward apparently dominated by perennial rye-grass, bents *Agrostis* spp., false oat-grass, fescues *Festuca* spp., cocksfoot, yarrow, ribwort, creeping buttercup *Ranunculus repens*, meadow buttercup, ground ivy, and a small quantity of black knapweed *Centaurea nigra*.

The boundaries of this field are dry stone walls, however numerous native and non-native trees and shrubs have been planted adjacent to these walls and which include alder *Alnus glutinosa*, goat willow, weeping willow *Salix babylonica*, crack willow, grey poplar, alder buckthorn *Frangula alnus*, and a cotoneaster species *Cotoneaster* sp. amongst others.



Above: the western paddock –looking north

5.2 Protected species

There was no evidence of protected species utilising the proposed application site. However the following observations were made:

Bat roost potential

On the cottage some of the tile-stones have lifted or slumped and thus cavities within the tile-stone covering of the roof will have formed to the extent that the covering of tile-stones offers Moderate bat roost potential.

An exposed end of a roof timber is present in the southern elevation of the cottage and a considerable part of this beam has rotted thus creating a cavity which it is considered offers a Low bat roost potential.

The top of the cottage's chimney is in a poor condition with several gaps between stones having formed and thus this feature offers Low bat roost potential.



Above: a slipped tile-stone over the western elevation of the cottage



Above: the partially rotted end of a roof timber in the cottage's southern elevation



Above: the chimney on the northern elevation of the cottage: in poor condition and with Low bat roost potential

In addition the stone-built shed to the north of the cottage has Moderate potential as a night roost for bat species. The byre in the west of the northern paddock also offers Moderate night roost potential for bats but to a significantly lesser extent than the stone-built shed due to its construction materials having poorer thermal properties and the size of the byre's entrance potentially allowing for greater exposure to wind, rain and temperature fluctuations.

No tree on or adjacent to the proposed application site offered any bat roost potential.

The barn in the southern part of the wider survey site supported bat droppings and thus is a proven bat roost.

Bat foraging and commuting

The woodland (including the garden /woodland area), paddocks and the boundaries of the western paddock are likely to offer suitable foraging and commuting opportunities for a range of bat species. The survey site lies in a sheltered situation (lying on the eastern side of a small valley) and thus will likely be of greater foraging and commuting potential for bats than much of the adjacent landscape which comprises large arable fields with low hedge or low dry stone boundary features.

However it is to be noted that the area of potential bat foraging habitat which would be lost to the works proposed here is very small and restricted to the footprint of the proposed annexe.

Reptiles / amphibians

With the exception of the dwelling and the courtyards the whole of the survey site offers optimal reptile habitat and optimal terrestrial habitat for amphibians. Long grass, unmanaged shrubby boundaries and dry stone walls are all features likely to be of value for these species.

The troughs on the western edge of the main courtyard theoretically could support a small population of breeding amphibians such as smooth newt *Lissotriton vulgaris*. However the HSI conducted over the troughs leads to a score of “Below average” with regard to their potential to support breeding great crested newts and it is here considered very unlikely that these features could be utilised by a breeding population of this species.

Breeding birds

There was no evidence of birds having bred on or within the cottage or any of the other structures adjacent to the proposed application area. However there will be the potential for a crevice-nesting bird such as blue tit *Cyanistes caeruleus* to nest within the partly-rotted exposed roof beam on the southern elevation of the cottage.

There will also be the potential for common generalist bird species to nest within the byre and the stone-built shed.

The line of shrubs and young trees separating the northern paddock from the cottage and its curtilage has the potential to offer nesting opportunities for species such as robin *Erithacus rubecula*, wren *Troglodytes troglodytes* and blackbird *Turdus merula*.

The garden / woodland area and the line of trees and shrubs forming the south-western boundary of the northern paddock also have the potential to offer nesting opportunities for a range of common generalist breeding bird species.

Other species

The habitat on this site offers low potential for **dormice** and the surrounding landscape also offers poor habitat for this species and it is here considered that this species is unlikely to be present on this site or within the adjacent landscape.

Hedgehogs are likely to utilise the wider survey site for nesting, breeding, hibernating and foraging as it offers optimal features and habitat for this species.

No evidence of **badgers** was recorded during the survey but it is likely that this species will forage and commute over the site; the paddocks and woodland offer good foraging potential for badgers.

With the exception of common amphibians **aquatic and semi-aquatic species** are very unlikely to be present here given the lack of waterbodies and watercourses. With the potential exception of smooth newts the troughs will be inadequate to support these species as they are of small size and likely to become dry during periods with low rainfall, and the possible rill in the western paddock will likely be a shallow and ephemeral feature which will be incapable of offering these species any habitat or foraging value.

5.3 Ecological data search

Designated sites

There are no statutory or non-statutory designated sites within one kilometre of the survey site.

Protected and / or notable species

There are seventeen records of protected and / or notable species within one kilometre of the survey site with the majority of these being of common generalist bird species. However there are two records of hedgehog, one record of brown hare *Lepus europaeus*, and one record of badger.

Discussion of ecological data.

It is possible that the paucity of ecological data for the one kilometre search area is due to this location being in a relatively isolated rural setting with few areas of notable semi-natural habitat which would draw volunteer wildlife recorders to this location.

6. Recommendations

The proposed development area

6.1 Translocate the semi-improved neutral grassland

To preserve this grassland community on the site it is recommended that it be carefully lifted as thick turves (preferably as long strips of thick turf with much soil attached) and placed outside the area of the northern paddock where works and associated vehicle movements and material storage will be occurring. The receptor site will have to have been prepared beforehand by stripping an equivalent area of species-poor turf elsewhere in the northern paddock. Once the semi-improved neutral grassland turf has been translocated in this manner it will need to be watered regularly, particularly so if the operation is conducted during a period of dry weather.

6.2 No disturbance to the byre

The byre within the northern paddock must not be disturbed or removed prior to its value as a bat night roost being determined. Thus this structure should be surrounded by Heras fencing during clearance and construction works associated with the annexe and no security lighting should be left on adjacent to it. Bat surveys between May and September inclusive would help determine its actual value for bats.

Further considerations

6.3 Bat emergence / roost return survey of the cottage

As the cottage is so close to the proposed development site and has been identified as supporting features with both Moderate and Low bat roost potential, it would be advantageous to determine whether bats use this structure as a roost site. Thus it is recommended that additional survey effort to determine the likely presence or absence of bats.

Thus two emergence / roost return surveys should be conducted over the building over dates between May and August inclusive; both surveys could potentially be done in May if atmospheric conditions are favourable or could be staggered across the survey season according to choice and surveyor availability -ideally the surveys need to be a minimum of two weeks apart.

The positions of the potential bat roost features are such that three surveyors (or two surveyors with a motion-activated camera and bat detector in place of a third surveyor) are required to satisfy the survey requirements of all potential bat roost features being observed during the surveys.

It is to be noted that should either of the two surveys identify bats emerging from or returning to cottage it will be necessary to undertake a third emergence / roost return survey over the feature where bats were recorded entering /exiting.

Static detecting equipment should also be placed within the byre and the stone-built shed to determine whether these features are used as night roosts.

6.4 Consideration of breeding birds

Should the site be subject to works between March and September inclusive it is recommended that a suitably experienced ecologist determine whether any breeding bird activity is occurring on those features likely to be disturbed (mainly line of shrubs and young trees to the north-west of the dwelling but also the western edge of the garden / woodland where the proposed garage is proposed).

If breeding activity (including adult birds building a nest) is observed it is recommended that a 5m exclusion zone be placed around the nest site until all young have fledged.

6.5 Consideration of hedgehogs and reptiles

Any works which will involve the removal of structures, shrubs or areas of dense vegetation should be preceded by a thorough survey by a suitable experienced ecologist who will determine the proven or likely potential for hedgehogs and reptiles to be nesting (with regard to hedgehogs) or sheltering in those features. The ecologist will then advise on the potential impact of the proposed works on these species. However it is advised that such features not be disturbed or removed where possible.

7. Conclusions

The proposed application site supports a habitat of moderate ecological interest as semi-improved neutral grassland. Other habitats of lower ecological interest in close proximity to the proposed application site include a line of trees and shrubs forming the south-western boundary of the northern paddock and the small areas of mixed garden / woodland.

The cottage has features with Moderate as well as Low potential to support roosting bats and thus further bat survey (roost and return surveys) would be required here should any works be later proposed for the cottage (Note: none are currently planned). In addition two small ancillary structures have Moderate potential to offer night roost opportunities for bats and, should any works be proposed for them at a later date, they should also be subject to further survey effort through a static detector survey.

Small water troughs on this site have been identified as having a below average value for breeding great crested newts and the potential for this site to offer opportunities for a breeding population of this species is considered very low. However amphibians in the terrestrial phase of their lifecycles, as well as common reptile species, can realistically be anticipated here, however dedicated reptile surveys here are not considered proportionate.

It is likely that common generalist bird species will nest on this site mainly in trees and shrubs - where nesting activity can be anticipated between March and September inclusive. Care must be taken not to disturb or destroy the nests, eggs or young of breeding birds.

Hedgehogs can be anticipated on the wider survey site with the potential for this species to nest or shelter here in areas of dense vegetation.

In addition it is recommended that the area of the northern paddock supporting semi-improved neutral grassland be turf stripped and the turf translocated elsewhere within the paddock.

To avoid damaging, disturbing, and potentially lethal impacts upon breeding birds, hedgehogs and reptiles a suitably experienced ecologist should determine the likely presence of these species prior to the works commencing and advise the client accordingly.

APPENDIX 1: Great crested newt Habitat Suitability Index score for the troughs

1. Geographic location	1.0
2. Pond area	0.0
3. Permanence	0.1
4. Water quality	0.33
5. Shade	1.0
6. Waterfowl	1.0
7. Fish	1.0
8. Pond count	0.1
9. Terrestrial habitat	1.0
10. Macrophytes	0.3

Total = 0.583 (Below average)

APPENDIX 2: Data to inform a Biodiversity Net Gain assessment

Approximate number of species per m² in the northern paddock where the annexe is proposed to be erected: 8

Average height of the sward in the northern paddock where the annexe is proposed to be erected: 0.75m

Average height of shrubs and trees in the boundary between the cottage and the northern paddock: 4m

Average width of shrubs and trees in the boundary between the cottage and the northern paddock: 1m

Average height above ground level of lowest branches of shrubs and trees in the boundary between the cottage and the northern paddock: 0.25m

APPENDIX 3: Protected species survey of the stables / stores

Note: these structures are outside the proposed planning application area and will not be impacted by the proposed works. There are no known plans to undertake any works to these structures.

Description and methodology

At the same time as the area which will be subject to the proposed planning application was being surveyed this range of single storey buildings was subject to a brief incidental survey to identify evidence of protected species and, in the absence of such evidence, to assess the likelihood of those species using the structures.

As described above these structures comprise a stone-built barn in the north, four stables to the south of the barn, and a shed /store to the south of the stables. The range forms an “L” shaped single structure in the south of the holding. All the individual components of this range are single void structures and appeared in good condition.

The northern barn, with mortared stone walls, a stone-tile roof and a screed floor has no windows but has a large wooden door in its southern elevation. At the time of survey the barn was largely empty except for some tables and was generally in a clean condition.

The remainder of this range comprises conjoined structures with a mortared stone eastern elevation and single pitch corrugated panel roofing over a timber framework. The western elevation comprises mostly large wooden doors associated with a timber framework and sections of breezeblock walling which also forms some of the internal divisions; large apertures (approximately 0.5m x 1.5 m in size) are present above the doors in the stables. A tractor was present within the shed /store but all other parts of this range were empty and relatively clean.

The same survey methodologies were applied here as were applied on the structures within the area subject to the proposed planning application.

Results

The barn provided evidence of breeding swallow *Hirundo rustica* and also a roosting bat, most likely lesser horseshoe bat *Rhinolophus hipposideros*.

Breeding swallows: Two nests of this species were recorded within western end of the roof space of this building. Both were covered with cobwebs and thus are unlikely to have been active within the year prior to this survey

Roosting bat: A large number of droppings were recorded on the floor of the southern central part of the barn. Their shape, size and position (below a small nail in part of the roof structure) suggest that these are the droppings of lesser horseshoe bat. However as this range of buildings will not be impacted by the works associated with the proposed planning application no DNA analysis of the droppings has been undertaken, although a sample of the droppings were collected and stored securely in the event of such an analysis being necessary.

The droppings were not fresh and are estimated to be between one and two years old.

No other part of this range offered any evidence of protected or otherwise notable species. As the barn is kept shut and locked it is unlikely that horseshoe bat species or birds will currently be able to

access the interior of this structure. However the other parts of the range have open or lightly-sealed apertures which could allow bats of all species and breeding birds access.



Above: the stone barn and the northernmost of the stables

Site plan

Smerill Farm, Kemble: PRA & PEA (October 2023)

