

Ecological Appraisal (EcA) Phase 1



Mow Cottage,
Worms Lane,
Felpham,
Arun,
West Sussex,
PO22 6EP
GR: SU 96610 01175

December 2018



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1. Contract Details

Ecological Appraisal: Phase 1	
Grid Reference:	SU 96610 01175
Client:	Glenn Keen
Architect/Planning Consultant:	Nigel Locke
Date of Survey:	05/12/2018
Date of Report:	11/12/2018
Report Reference:	EcA_Worms-Lane_G.Keen_December_2018
Associated Reports Reference:	N/A
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Legal and Moral Constraints and Responsibilities Summary

An overview of relevant legislation and responsibility is given within Appendix L. Planning Policy and Legislation. Constraints exist for development where specific habitats or species are, or are potentially, within or adjoining a site proposed for development. Therefore, avoidance, mitigation, compensation and enhancement for a site will apply.

In all instances where Mitigation is given, also refer to:

- Any further survey work for protected species (Phase 2 Surveys) recommended, or their results.
- General Good Practice during Construction Stage.
- Law and Legislation pertaining to specific species (plants and animals)
- Prevention of the spread of native and non-native invasive plants and animals.
- Avoidance of Wildlife Crime <http://www.nwcu.police.uk/>

Further advice if species are found onsite during development may be sought from Ecological Surveys Ltd (Tel: 01503 240846 or 07736 458609) or Natural England.



2. Executive Summary

Table 1: Summary

Proposed development:	It is understood that the proposed development is for the re-construction of the collapsed house and greenhouse structures. Part of the land will be returned to ploughing and a no-dig drive will be created from the existing site access to the reconstructed house.
Purpose of the report:	To present the results of the Extended Phase 1 Habitat Survey undertaken at Mow Cottage, Worms Lane, Felpham, West Sussex hereafter referred to as 'the site', assess the impacts of the proposed development on the important ecological features identified; and detail mitigation measures and biodiversity enhancements.

CONCLUSIONS and RECOMMENDATIONS

Further survey work (Phase 2 Surveys) required PRIOR to ANY further works relating to development or submission of planning application:	- Great Crested Newt eDNA Survey (15th April and 30th June) Should impact / removal be necessary for Hedgerows, Trees, Scrub or adjacent Ditch the following surveys will also be required - - Bat Emergence/Re-entry Survey (May – September) - Bat Activity Survey (May (Spring) and/or July (Summer) and/or September (Autumn)) - Water Vole Survey (March – September) - Dormouse Survey (April – October)
Mitigation REQUIRED	- Retention of Hedgerows, Scrub, Ditch, and Trees - Construction Exclusion Zones - Silt fencing - Artificial Lighting Strategy - Seasonal Constraints to the removal/cutting-back of Woody Species
Biodiversity Enhancements	- Bat Roosting Provision: one bat tube - Bird Nesting Provisions: one house sparrow terrace and one bird brick - Solitary Bee Provisions: two bee bricks - New Hedgerow planting - Pond Creation - Landscaping for the Benefit of Wildlife

**IMPORTANT ECOLOGICAL FEATURES (IEF)**

Designated sites	Onsite - None. Offsite - None.
Habitats	Onsite - Hedgerows with trees - Scrub - Trees Offsite - Standing Water - freshwater ditch - Coastal and Floodplain Grazing Marsh Priority Habitat - Deciduous Woodland Priority Habitat
Species	Onsite - Nesting birds - Bats - Common dormouse (<i>Muscardinus avellanarius</i>) - Amphibians, including great crested newt (<i>Triturus cristatus</i>) Offsite - European water vole (<i>Arvicola amphibius</i>)

INVASIVE NON-NATIVE SPECIES

Invasive Non-native Plant Species	On site: None identified during survey. In the immediate vicinity: None identified during survey, although 11 species have been recorded within a 2km radius of the site.
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Client/Acting Agent Essential Next Steps:

- ✓ Commission the Phase 2 Surveys REQUIRED before undertaking ANY works onsite.
- ✓ Read and highlight what is required of the client/acting agent prior to, during and post development.
- ✓ Ensure all onsite contractors/personnel are familiar with and able to act upon law and legislation governing protection of species and habitats onsite and mitigation specifically pertaining to this site.

The consideration of whether ecological constraints exist to prevent this development is reserved until after all results of the further (Phase 2) surveys have been analysed, and mitigation and enhancements have been agreed. Therefore, full planning permission should be withheld pending the results of the further survey work required (Phase 2 survey work).

Any works to this site, post the results of this ecological survey being received verbally or in writing, could constitute a Wildlife Crime (Appendix E. Wildlife Crime: <http://www.nwcu.police.uk/>).

Table 2. Ecological Losses and Gains

Details for each heading and sub-heading and REQUIRED mitigation/enhancement process is described within Section 7 and Section 9.

In each instance: General Good Practice during Construction is REQUIRED

Characterization of unmitigated impact to Important Ecological Feature (IEF) (LOSS)	Phase 2 Survey Requirements &/or Mitigation Strategy Requirements	Enhancement GAIN	Significance of Residual Effects
STRUCTURES: - Not IEF			
Clearance and re-construction of fallen house and greenhouse. These structures have no current ecological value.	Not required.	Bat Roosting Provision: 1x Bat Tube to be built into the replacement house. Bird Nesting Provisions: 1x House Sparrow Terrace and 1x Bird Brick to be built into the replacement house. Solitary Bee Provisions: 2x Bee bricks to be built into either the replacement greenhouse (if construction is suitable) or house.	Positive long-term effects.
HEDGEROWS: - IEF			
It is understood all hedgerows will be retained. Potential artificial lighting of hedgerow.	Retention of Hedgerows: Should removal be necessary, a Dormouse Survey and a Bat Activity Survey will be required. Seasonal Constraints for the Cutting-back/Removal of Woody Species will apply, with cutting-back/removal not occurring within bird nesting season.	New Hedgerow planting: A new hedgerow will be planted along the eastern boundary of the site.	Positive long-term effects.

	Artificial Lighting Strategy: REQUIRED. Artificial lighting to be no more than 0.5 lux within 5m of the hedgerows. Construction Exclusion Zone: a buffer of 3m from the hedgerow in the south of the site is required given the potential presence of dormice and nesting birds.		
TREES: - IEF			
It is understood trees will be retained. Potential artificial lighting of trees with bat roosting value.	Retention of Trees: Should removal be necessary, Bat Emergence Surveys will be required. Seasonal Constraints for the Cutting-back/Removal of Woody Species will apply, with cutting-back/removal not occurring within bird nesting season. Artificial Lighting Strategy: REQUIRED. Artificial lighting to be no more than 0.5 lux within 5m of the trees. Construction Exclusion Zone: representing the Root Protection Area (RPA) of trees within 20m of proposed works.	Not required.	No residual negative effects.
SCRUB: - IEF (for nesting birds and potentially bats and dormice)			
Potential artificial lighting of scrub. It is understood scrub will be retained.	Retention of Scrub: Should removal be necessary, a Dormouse Survey and a Bat Activity Survey will be required. Seasonal Constraints for the Cutting-back/Removal of Woody Species will apply, with cutting-back/removal not occurring within bird nesting season.	Not required.	No residual negative effects.

	Artificial Lighting Strategy: REQUIRED. Artificial lighting to be no more than 0.5 lux within 5m of the scrub. Construction Exclusion Zone: a buffer of 3m from scrub is required given the potential presence of dormice and nesting birds.		
STANDING WATER - FRESHWATER DITCH (OFFSITE): IEF			
Ditch adjacent to the southern site boundary. It is understood that proposed works will not directly involve the adjacent ditch. Potential siltation of habitat with potential to support protected species.	Great Crested Newt eDNA Survey: REQUIRED. No works can take place until Great Crested Newt Survey has concluded. Retention of Freshwater: Should the ditch be involved in the proposed development, a Water Vole Survey will be required. Construction Exclusion Zone: along the ditch adjacent to the site. Silt fencing: along the CEZ fencing adjacent to the ditch.	Pond Creation: A new pond/ponds should be created on site.	Positive long-term effects.
COASTAL AND FLOODPLAIN GRAZING MARSH (OFFSITE): IEF			
Priority Habitat to the north of the site, north of the A259 (Worms Lane).	Silt fencing: along the CEZ fencing adjacent to the ditch.	Not required.	No residual negative effects.
DECIDUOUS WOODLAND (OFFSITE): IEF			
Priority Habitat adjacent to the western boundary of the site.	Artificial Lighting Strategy: REQUIRED. Artificial lighting to be no more than 0.5 lux within 5m of the deciduous woodland.	Not required.	No residual negative effects.

Characterization of unmitigated loss/ impact to IEF Species.	Phase 2 Survey Requirements &/or Mitigation Strategy Requirements.	Enhancement GAIN Required.	Significance of Residual Effects
BATS: - IEF			
It is understood that bat habitat will be retained. Potential artificial lighting of trees with bat roosting value.	Should trees with bat roosting potential require removal, a <u>Phase 2 Bat Emergence Survey</u> will be required. Should Scrub or Hedgerows require removal a <u>Bat Activity Survey</u> will be required. <u>Artificial Lighting Strategy:</u> REQUIRED. Artificial lighting to be no more than 0.5 lux within 5m of the hedgerows, trees, or scrub.	<u>Bat Roosting Provision:</u> 1x Bat Tube to be built into the replacement house. <u>New Hedgerow planting:</u> A new hedgerow should be planted along the eastern boundary of the site.	Positive long-term effects.
BIRDS: - IEF			
Hedgerows, scrub and trees on site support nesting birds. It is understood that bird habitat will be retained.	<u>Seasonal Constraints for the Cutting-back/Removal of Woody Species</u> will apply, with cutting-back/removal not occurring within bird nesting season. <u>Construction Exclusion Zone:</u> a buffer of 3m from the hedgerow and scrub given the potential presence of dormice and nesting birds.	<u>Bird Nesting Provisions:</u> 1x House sparrow terrace and 1x Bird Brick to be built into the replacement house. <u>New Hedgerow planting:</u> A new hedgerow should be planted along the eastern boundary of the site.	Positive long-term effects.
AMPHIBIANS: - IEF, including great crested newt			

The ditch adjacent to the southern boundary has the potential to support amphibians, including great crested newt. Potential siltation and accidental disturbance of habitat with potential to support amphibians. Potential injury/death of amphibians present on the site during the construction phase. It is understood that proposed works will not directly involve the adjacent ditch.	Great Crested Newt eDNA Survey: REQUIRED. No works can take place until Great Crested Newt Survey has concluded. Construction Exclusion Zone: along the ditch. Silt fencing: along the CEZ fencing adjacent to the ditch. Further mitigation measures may be required pending the results of the eDNA Survey.	Pond Creation: A pond/ponds should be created on site.	Effect to be assessed pending Phase 2 Survey results.
COMMON DORMOUSE: - IEF			
The hedgerows and scrub on site have the potential to support dormice. It is understood that dormouse habitat will be retained.	Should Scrub or Hedgerows require removal, a Dormouse Survey will be required. Construction Exclusion Zone: a buffer of 3m from the hedgerows and scrub.	Not required.	No residual negative effects.
INVERTEBRATES: - not IEF			
No predicted loss to invertebrate habitat.	Not required.	Solitary Bee Provisions: 2x Bee bricks to be built into either the replacement greenhouse (if construction is suitable) or house.	Positive long-term effects.
EUROPEAN WATER VOLE (OFFSITE): - IEF			

The ditch adjacent to the southern boundary has the potential to support water voles. Potential siltation and accidental disturbance of habitat with potential to support water voles. It is understood that proposed works will not directly involve the adjacent ditch.	Should removal/infilling/draining of the ditch be required in the proposed development, a <u>Water Vole Survey</u> will be required. <u>Construction Exclusion Zone</u>: along the ditch adjacent to the site. <u>Silt fencing</u>: along the CEZ fencing adjacent to the ditch.	Not required.	No residual negative effects.
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3. Introduction and Terms of Reference

The site comprises a field bounded by scrub and hedgerow and occupies approximately 0.86 hectares on the northern fringe of the settlement of Felpham (reference Figure 1). The ruins of a collapsed house and greenhouse are also present on site.

Ecological Surveys Ltd were commissioned to undertake an Extended Phase 1 Survey (to include the potential for legally protected and notable species) of the site, and to assess the potential impact of the development on the biodiversity of the site and its immediate environs. Ecological Surveys Ltd has not been informed of any previous surveys undertaken on this site that need to inform this report.

The purpose of this report is:

- ✓ To identify and describe all potentially important ecological features, including designated sites, habitats and species.
- ✓ To provide advice and recommendations where possible to avoid or mitigate any adverse impact and consider compensation measures if required.
- ✓ To set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects.
- ✓ To identify appropriate enhancement measures.

It should be noted that this Ecological Assessment report relates specifically to the specified brief and proposal description of the development. If any changes to the brief or the proposal are made, then Ecological Surveys Ltd should be consulted. A re-appraisal or appraisal amendment may be required.

Further survey work (Phase 2 Surveys) are only recommended where deemed necessary to ensure continued protection from harm or death of specific species and when instructed by the local planning authority (LPA). It is the responsibility of the client to commission these. Please note: there are varying seasonal constraints on conducting Phase 2 Surveys which may delay development if not commissioned as advised. A table pertaining to optimum time for legally protected and notable species surveys is within Appendix B. If Phase 2 Surveys are required, please contact Ecological Surveys Ltd immediately to discuss the next steps.

In some instances, for certain species and habitats, it may be that additional surveys can be avoided where an appropriate Mitigation Strategy is put in place and agreed by the client.

It is the client's responsibility to ensure all recommended ecological surveys are completed and mitigation/compensation/ enhancement plans are adhered to.

It is the responsibility of the client/developer to ensure they familiarise themselves with and comply with any law and/or legislation relating to this survey's findings and recommendations. An overview of planning policy and regulation relating to this survey may be found within Appendix E. Planning Policy and Legislation of this report but is by no means comprehensive. Contractors and visitors to the proposed site should always refer to the law and legislation pertaining to protected species and proceed mindfully.



Biodiversity is dynamic. Therefore, if the site is not maintained exactly as it was at the time of the survey, the information contained within this report should only be relied upon for a maximum of twelve months from the date of survey (5th December 2018). Should the site be maintained in exactly the same condition, the report conclusions can be relied upon for a maximum of two years from the date of survey (5th December 2018). An updated report will be required after this time.

Figure 1. Map: Location of the Development Site



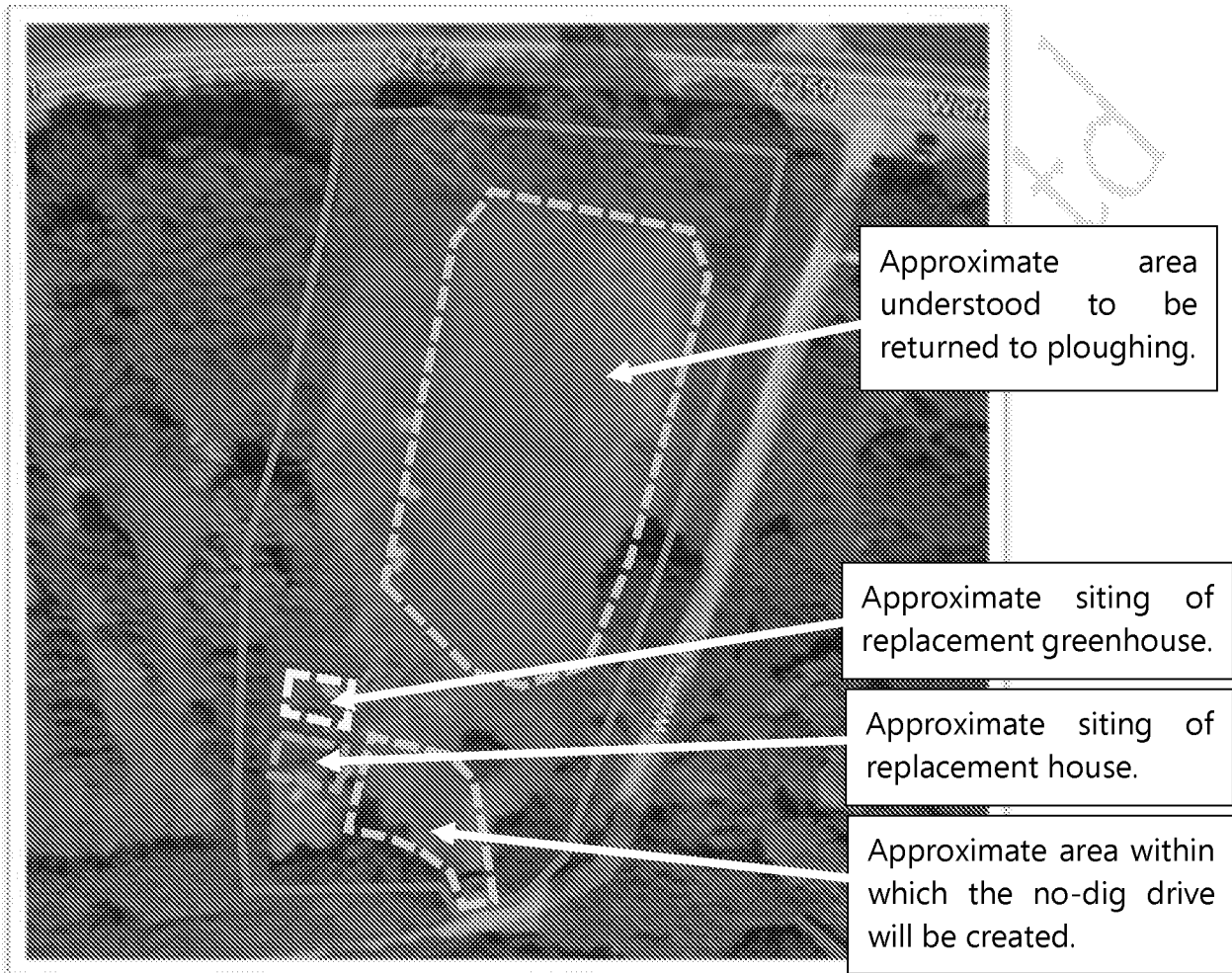


4. Proposed Development

It is understood that the proposed development is for the re-construction of the collapsed house and greenhouse structures. Part of the land will be returned to ploughing and a no-dig drive will be created from the existing site access to the reconstructed house.

No specific plans have been received showing the proposed development.

Figure 2. Client/Architect's Proposed Development



5. Methodology

This Ecological Appraisal encompasses the establishment of the ecological baseline by undertaking a desk-based study, drawing on existing information and data, and a field survey; evaluation of the impacts of the proposed development on the designated sites, habitats and species found both on site and in the immediate vicinity of the site and the identification of measures to mitigate the impacts; and the identification of ways to enhance the biodiversity of the area

Please note that species are referred to by their common names throughout this report.

5.1 Desk Study/Data Search

A search was made for existing data relating to both the site itself and the area within a two-kilometre radius. Websites were consulted (refer to [Data Search Websites](#)).

Sussex Biodiversity Record Centre (SxBRC) biological data records were also used to provide detailed local information and have informed this report.

Data held by county record centres is reliant on the information input into the system. The absence of a record of a species in a particular area is not evidence that the particular species does not exist but may simply be due to a lack of survey effort, or a failure to record its presence. Therefore, an absence of evidence (records) should not be interpreted as evidence of absence.

5.2 Field Survey

A site visit was undertaken to physically survey the site. Site visits permit a far more accurate assessment of a site, its ecological features (habitats, species and potential species) than is ever possible using a desk-based assessment alone.

The site visit included carrying out an Extended Phase 1 Habitat Survey, consisting of a walkover assessment of the site using Phase 1 Habitat Survey methodology (JNCC, 2010). This is a standard technique for classifying and mapping British habitats. All areas within the site were surveyed and assessed for indicators of ecological value, including the presence or signs of any legally protected or rare species.

All habitats on site were identified and where required, are recorded within the Report. A plant species list was also compiled.

A search was made to identify the presence or potential presence of notable and protected species such as dormice, badgers, bats and reptiles following the applicable guidelines from Natural England and relevant conservation organisations. A search was also made to identify the presence of any invasive non-native species (particularly those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)), including Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*).

Any buildings onsite were assessed for their potential to support roosting bats (using the criteria set out in Appendix C). Buildings were examined both externally and internally to consider the potential and actual use by bats, as well as by nesting birds.



Any hedges present have been assessed for their 'importance' under the 1997 Hedgerows Regulations. As all native hedgerows over 20m in length are now classified as a priority habitat feature, these too were recorded.

Areas outside of the development site boundary were assessed where possible, if evidence from the site indicated that legally protected/rare species may be present in close proximity to the site. Examples include: badger trails, potential nesting or roosting habitat adjoining the site.

Whilst the initial survey is not intended to prove conclusively, or otherwise the presence of notable and / or protected species, it does highlight the potential presence of any such species and makes recommendations as to any additional surveys that might be required to ensure the LPA fulfils its responsibilities under the various regulations and legislation intended to protect specified habitats and species.

The survey was conducted in December when the majority of plant species are not flowering so it is possible that some plant species were not recorded because they were not evident. All surveys were carried out under suitable weather conditions. However, any single survey gives a snapshot of species and habitats present on site on a particular day. The presence or absence of species recorded on site that day, particularly mobile species with larger home ranges, will vary and does not therefore necessarily represent the total species using the site over time. However, an experienced ecologist should be able to visit a site and survey habitats at any time of year and assess the likelihood of protected species occurring on site and will thus recommend Phase 2 Protected Species Surveys as appropriate.

5.3 Assessment

All ecological data and information gained through both the desk-based study and the survey work were evaluated. The important ecological features were then identified and evaluated against the potential impacts/effects that the proposed development may have on the ecology of the site and surrounding area.

The biodiversity importance of each designated site, habitat and species is evaluated on a geographic scale: international, national, county and local.

Evaluation of habitats considers their designation; their area, quality and viability; diversity and connectivity to the wider landscape; and structural diversity and species-richness.

Evaluation of species considers their designation, including legal protection and rarity.

When assessing the impact of the development and changes to the baseline conditions on site, predictions will be made which focus solely on the zone of influence whilst taking into consideration the lifespan of the development and the significant impacts as identified from the proposed work operations throughout the lifespan of the development.

The proposed development aims to firstly avoid and then mitigate against any potential effects/impacts on the local ecology/biodiversity, ensuring compliance with nature conservation legislation. It aims to achieve this by applying the mitigation hierarchy and delivering mitigation measures that:

- avoid significant negative ecological impacts/effects;



- reduce negative impacts/effects that cannot be avoided; and
- compensate for any remaining significant negative ecological impacts/effects.

Appropriate measures to avoid and/or minimise the significant negative effects on the important ecological features have been identified. These mitigation measures aim firstly to avoid the overall effect/impact, or for those that cannot be avoided, reduce their overall effect value. It is not always possible to fully mitigate an adverse effect to neutral levels.

The aim of development should be to deliver net ecological gain on site as well as limiting damage to important ecological features. Using the information gained during the desk study and the extended Phase 1 habitat survey, and the ecological requirements of habitats, species and local environmental conditions, biodiversity enhancements for the site have been considered, providing opportunities to increase the diversity of habitats and species on site.

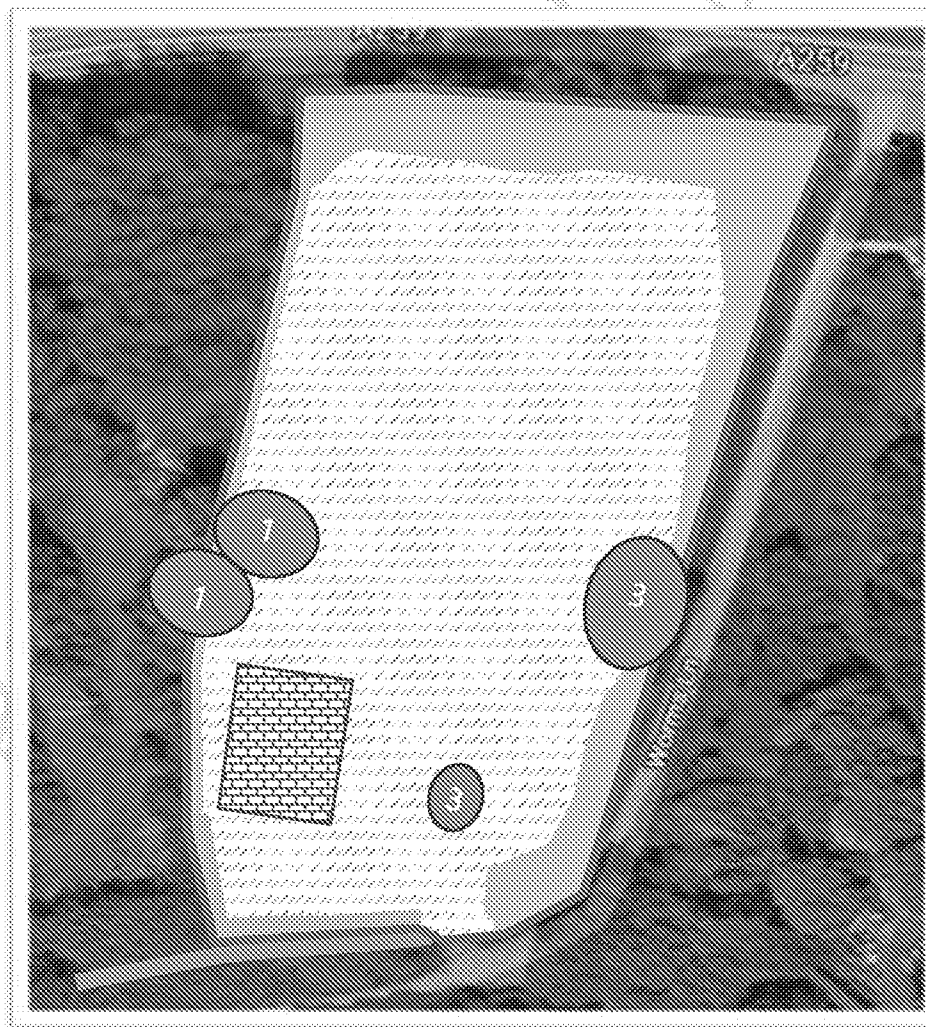
Ecological Surveys Ltd

6. Baseline Ecological Conditions

Figure 3. Map of Habitats and Species Present during the survey

N.B. Avoidance of the removal of habitats generally retains a greater biodiversity value.

Site boundary	
Hedgerow	
Standing water	
Poor semi-improved grassland	
Scrub	
Area of fallen structures	
Free-standing Trees (Bat roosting category 1*, 1, 2, or 3)	



6.1 Designated Sites

Designated sites of international, national and local importance are listed below, along with their approximate distance from the proposed development.

Special Areas of Conservation (SAC):	Duncton To Bignor Escarpment ~12km to the north (at its closest point)
Special Protection Area (SPA):	Pagham Harbour ~7.8km to the south-east (at its closest point)
RAMSAR:	Pagham Harbour ~7.8km to the south-east (at its closest point)
World Heritage Site	None found within 2km.
Site of Special Scientific Interest (SSSI):	None found within 2km.
Areas of Outstanding Natural Beauty:	None found within 2km.
National Nature Reserve (NNR):	None found within 2km.
Local Nature Reserve (LNR):	None found within 2km.
County Wildlife Site (CWS), known locally as Local Wildlife Sites (LWS):	Middleton Shingle ~1.6km to the south (at its closest point) Elmer Rocks ~2km to the south-west (at its closest point)

A 'Habitats Regulation Assessment' (HRA) is unlikely to be required on this site. Refer to [Appendix G. Habitats Regulation Assessment \(HRA\)](#) for details.

Designated sites considered to be Important Ecological Features, with respect to the proposed development:	- None.
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6.2 Habitats (onsite)

Where additional surveys are required refer to [Further Survey Work](#)

Where specific Mitigation Strategies and Enhancement features are required, this has been detailed in [Section 7](#) and [Section 9](#).



a) **Buildings and Structures**



Collapsed House (L) and Collapsed Greenhouse (R)

Construction Details	Constructed of: Brick Roof: None Cavity wall: No Insulation: None
Legal Constraints	None.
Survey Constraint	None.
Important Ecological Feature (IEF)	No.
Protected Species – Bats	
Features of Note	Structures are collapsed with no roof.
Roosting Assessment	Potential for bat roost: None.
Evidence	None.
Loss	No loss to bat roosting features.
Bat Survey	Phase 2 Surveys are not required in relation to structures.
Mitigation	Not required.
Enhancement	Required. <u>Refer to Section 9.</u>
Protected Species – Birds	
Nesting Assessment	Potential for bird nesting: None
Loss	No loss to bird nesting features.
Bird Survey	Phase 2 Surveys are not required in relation to structures.
Mitigation	Mitigation: - not required.
Enhancement	Required. <u>Refer to Section 9.</u>

b) **Hedgerows**

Hedgerow in the south of the site.



Hedgerow in the north of the site.

Hedgerows exist along the northern boundary and in the south-west corner of the site. Species found within this habitat include holly, garden privet, poplar, silver birch and willow. The hedgerows offer potential nesting habitat for birds and increase the ecological value of the site. It is possible that dormice may use this habitat as well as bats for foraging and navigating.

It is understood that there will be no direct loss of hedgerow as a result of proposed works. However, if sections of hedgerow will need to be removed, a Dormouse Survey and Bat Activity Survey will be required.

Legal Constraints	Legal constraints for protected habitats/species apply.
Important Ecological Feature (IEF)	Yes.
Survey	Phase 2 Survey Not Required, unless proposed works involve removal of hedgerows (see Section 8).
Mitigation	Required. Refer to Section 7.
Enhancement	Required. Refer to Section 9.
Compensation	N/A.

c) **Trees**

Oak on the eastern boundary of the site.

A number of free-standing trees exist on site. These are primarily willow and oak existing next to scrub on the east and west boundaries of the site. Specific trees have been assessed as capable of supporting bat roosts, as shown on the [Habitat map](#). Should these trees require removal, Bat Emergence Surveys will be required. Trees on site offer significant ecological value and are likely to support a variety of wildlife. This habitat also has value for bird nesting. It is understood that all trees will be retained.

Legal Constraints	Legal constraints for protected habitats/species apply.
IEF	Yes.
Survey	Phase 2 Survey Not Required, unless proposed works involve removal of trees (see Section 8).
Mitigation	Required. Refer to Section 7.
Enhancement	Not Required.
Compensation	N/A.

d) **Scrub**

Scrub along the northern boundary

Scrub exists along the northern, eastern, western and part of the southern boundaries. Plant species found within the scrub include hawthorn, blackthorn, willow, and bramble.

Scrub is generally valued by managers of designated sites for its contribution to biodiversity. In England and Wales scrub is generally valued primarily for the species it supports and as an important habitat for a wide range of higher plants, herbivorous insects and birds, including legally protected and notable species.

This habitat is considered to have value for nesting birds, as well as foraging and navigating bats. Where the scrub is particularly tall and dense, such as on the northern boundary, there is also potential for dormice. It is understood that scrub will be retained to act as a visual barrier between the site and adjacent areas. However, should this change, and removal be necessary, Dormouse Surveys and Bat Activity Surveys will be required.

Legal Constraints	Legal constraints for protected habitats/species apply.
IEF	Yes.
Survey	Phase 2 Survey Not Required, unless proposed works involve removal of scrub (refer to Section 8).
Mitigation	Required. Refer to Section 7.
Enhancement	Not Required.
Compensation	N/A.

e) **Grassland**

Short sward height grassland.

Most of the site is covered by very short sward height poor semi-improved grassland. This habitat has no potential to support protected species and is of negligible ecological value. Plant species present within this habitat include Yorkshire-fog, perennial rye-grass, bristly oxtongue, prickly sow-thistle, wild carrot, broad-leaved dock, lesser celandine, creeping buttercup, yarrow, and ground ivy.

Legal Constraints	None.
IEF	No.
Survey	Phase 2 Survey Not Required.
Mitigation	Not Required.
Enhancement	Not Required.
Compensation	N/A.

6.3 Habitats (offsite)

The proposed development site is situated on the northern edge of the coastal town of Felpham. It has the main residential area to the south and floodplain grazing marsh to the north, on the northern side of Worms Lane (the A259). Adjacent to the western boundary is broadleaved/deciduous woodland and to the east is young woodland/trees on a site owned by the Woodland Trust.

f) **Water**

Ditch adjacent to the southern boundary of the site.

A drainage ditch with standing water exists adjacent to the southern boundary of the site. This is part of a larger ditch network in the area, connecting to the floodplain grazing marsh to the north. Through communication with the client on site, it is understood that this feature rarely dries out.

This water body has the potential to support great crested newts (*Triturus cristatus*) and so a Habitat Suitability Index (HSI) was carried out (see Section 6.4i).

Water voles (*Arvicola amphibius*) could also be present within this habitat.

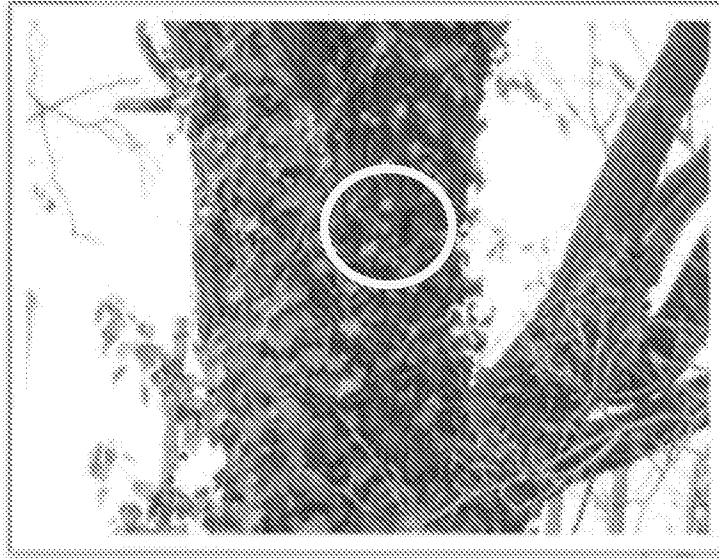
Legal Constraints	Legal constraints for protected habitats/species apply.
IEF	Yes.
Survey	Phase 2 Survey Required for great crested newts – see Section 6.4i. Phase 2 Survey Required for water voles if proposed works involve removal of ditch (refer to Section 8).
Mitigation	Required. Refer to Section 7.
Enhancement	Required. Refer to Section 9.
Compensation	N/A.

Priority Habitats within a 2km radius of the site

Coastal vegetated shingle
Coastal sand dune
Coastal and floodplain grazing marsh
Deciduous woodland

6.4 Protected Species

a) Bats



A hole present in a willow tree with a hollow centre.

Bat Roosts:

Trees present within the site were, where possible, assigned a value for the potential to support roosting bats, based on Bat Survey Guidelines (Collins, 2016) and indicated on the Habitat map.

- ◆ 1* - Tree with multiple, highly suitable features capable of supporting larger roosts.
- ◆ 1 - Tree with definite potential, supporting fewer suitable features than Category 1* trees or capable of supporting roosts for single/low numbers of bats.
- ◆ 2 - Tree with no obvious potential for roosting bats although due to its size and maturity the tree may support some features with limited potential to support bats.
- ◆ 3 - Tree with no roosting potential.

It was concluded that two willow trees on the western boundary were category 1 for bat roosting. These trees were hollow in the centre, with 1-2 clear holes around 2.5m-3m from the ground. Trees identified as having bat roosting potential may not be felled without a Bat Emergence/Re-entry Survey ascertaining the presence or absence of bats. Removal without proof of presence/absence may result in a wildlife crime.

Bat Activity:

The site is considered to offer some potential for foraging and navigating along the hedgerows, scrub, and trees. All semi-natural habitats are likely to have some value to foraging bats (Russ & Montgomery, 2002). In addition, records show rare bat species including Leisler's bat (*Nyctalus leisleri*) and Barbastelle (*Barbastella barbastellus*) within 2km of the site. However, provided scrub and hedgerow habitat is retained and mitigation to minimise artificial lighting pollution is followed, it is considered that proposed works will not negatively impact foraging/navigating bat habitat. Should this not be possible, and removal of habitat be necessary, a Bat Activity Survey will be required.

The following bat species have been recorded within a 2km radius of the site:

Common Name	Scientific Name
Barbastelle	<i>Barbastella barbastellus</i>
Brown long-eared bat	<i>Plecotus auritus</i>
Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Daubenton's bat	<i>Myotis daubentonii</i>
Leisler's bat	<i>Nyctalus leisleri</i>
Natterer's bat	<i>Myotis nattereri</i>
Serotine	<i>Eptesicus serotinus</i>
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Whiskered bat	<i>Myotis mystacinus</i>
Legal Constraints	Legal constraints for protected species apply.
IEF	Yes.
Survey	Phase 2 Surveys Required if hedgerow, scrub or trees require removal (see Section 8).
Mitigation	Required. Refer to Section 7.
Enhancement	Required. Refer to Section 9.
Compensation	N/A.

b) **European Badger (*Meles meles*)**

The site did not indicate any evidence for the presence of badgers or give any other indication that badgers regularly use this site. Consequently, the proposed development is unlikely to have any significant impact on badgers and no further action is needed unless any setts appear prior to the development occurring. In this case, advice on how to proceed should be taken from the ecological consultant working with this development on lawful procedure.

This species has not been considered further.

c) **Common Dormouse (*Muscardinus avellanarius*)**

The hedgerows and scrub bounding this site contain a number of tree / shrub species with potential to harbour dormice. Although data searches did not show dormice within 2km of this site, dormouse presence cannot be ruled out. Provided hedgerows and scrub are being retained and will not be impacted by the development, further surveys will not be required. However, should either hedgerows or scrub require removal, a Dormouse survey will be required.

Legal Constraints	Legal constraints for protected species apply.
IEF	Yes.
Survey	Phase 2 Survey Not Required, unless proposed works involve removal of scrub / hedgerows. Refer to Section 8.
Mitigation	Required. Refer to Section 7.

Enhancement	Not Required.
Compensation	N/A.

d) **Eurasian Otter (*Lutra lutra*)**

The habitats on site are not suited to habitation by otter. No evidence of otter was recorded during the survey, either on site or in the ditch adjacent to the site. Data searches do not show otters within 2km of this site. Sub-optimal habitat coupled with poor connectivity makes their presence highly improbable.

This species has not been considered further.

e) **European Water Vole (*Arvicola amphibius*)**

Although the habitats on site are not suited to habitation by water voles and the adjacent ditch is of low value, data searches show the presence of water voles within 150m of the site in a connected ditch. As such, the presence of water voles adjacent to the site cannot be ruled out. It is understood that proposed works will not directly impact the adjacent ditch and mitigation will therefore be appropriate. Should this not be the case, and proposed works require the ditch to be impacted, a Water Vole Survey will be required.

Legal Constraints	Legal constraints for protected species apply.
IEF	Yes.
Survey	Phase 2 Survey Not Required, unless proposed works directly impact the adjacent ditch. Refer to Section 8.
Mitigation	Required. Refer to Section 7.
Enhancement	Not Required.
Compensation	N/A.

f) **Other Terrestrial Mammals**

West European hedgehog (*Erinaceus europaeus*) and brown hare (*Lepus europaeus*) have been recorded within 2km of the site. Although hedgehogs could be present at times within scrub and hedgerows, these habitats are to be retained and not impacted by the proposed development. As such, mitigation is not required. The site is not considered to have value for brown hares, owing to the very short sward height of the grassland.

Legal Constraints	None.
IEF	No.
Survey	Phase 2 Survey Not Required.
Mitigation	Not Required.
Enhancement	Not Required.



Compensation	N/A.
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g) **Birds**



Bird nesting identified within the southern hedgerow.

Hedgerows, trees and scrub on site have the potential to support nesting birds. It is understood these habitats will be retained and not impacted. Should removal of bird nesting habitat be required, however, seasonal constraints to avoid removal during the bird nesting season and replacement nesting provisions will be required. The ecological value of the site for birds is considered to be moderate.

160 legally protected and/or nationally notable bird species have been recorded within a 2km radius of the site. The majority of these are found in coastal areas and are therefore unlikely to be found on site.

Legal Constraint	Legal constraints for protected species apply.
IEF	Yes.
Survey	Not Required.
Mitigation	Required. Refer to Section 7.
Enhancement	Required. Refer to Section 9.
Compensation	N/A.

h) **Reptiles**

Although three reptile species (grass snake (*Natrix helvetica*), slow worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*)) have been recorded within 2km, the habitats on site are unsuited to reptile species and consequently these species have not been considered further.

i) **Amphibians (including great crested newt)**

A Habitat Suitability Index (HSI) has been completed for the ditch adjacent to the south of the site and the score, 'Good' (0.79), would suggest a likely presence of great crested newts

(GCN). This, combined with the presence of records within 1km and close proximity between the ditch and the site, makes it impossible to rule out the potential occasional presence of GCN on site. As such, it is possible that GCN could be injured or killed during the construction phase. A Great Crested Newt eDNA survey is therefore required to assess the presence/absence of GCN within the ditch.

The following amphibian species have been recorded within a 2km radius of the site:

Common Name		Scientific Name
Common toad		<i>Bufo bufo</i>
Palmate newt		<i>Lissotriton helveticus</i>
Smooth newt		<i>Lissotriton vulgaris</i>
Common frog		<i>Rana temporaria</i>
Great crested newt		<i>Triturus cristatus</i>
Legal Constraints	None.	
IEF	Yes.	
Survey	Phase 2 Survey Required. Refer to Section 8.	
Mitigation	Required. Refer to Section 7.	
Enhancement	Required. Refer to Section 9.	
Compensation	N/A.	

j) **Invertebrates**

91 nationally and/or locally notable invertebrate species have been recorded within a 2km radius of the site, 84 of these being moth species. However, provided hedgerows, scrub, and trees are retained, no negative impact is predicted from the proposed development.

Legal Constraints	None.
IEF	No.
Survey	Phase 2 Survey Not Required.
Mitigation	Not Required.
Enhancement	Required. Refer to Section 9.
Compensation	N/A.

k) **Flora**

Although 44 legally protected and/or nationally notable plant species were recorded within 2km of the site, none were recorded onsite during the survey. The ecological value of the plant species on site is considered to be low.

A species list is included within [Appendix A. Flora Species Recorded Onsite.](#)

Legal Constraints	None.
IEF	No.
Survey	Phase 2 Survey Not Required.
Mitigation	Not Required.
Enhancement	Not Required.
Compensation	N/A.

l) **Invasive Non-Native Plant Species**

Although 11 species of invasive non-native plant listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended) have been recorded within 2km, no such species were recorded onsite during the survey.

7. Mitigation

The proposed development aims to firstly avoid and then mitigate against any potential effects/impacts on the local ecology/biodiversity, ensuring compliance with nature conservation legislation. Section 7 Figure 4, maps the mitigation measures.

Avoidance of adverse impacts on habitats and species as a direct or indirect result of development must always be the first consideration. It is often possible to avoid damaging a particular habitat feature, or to carry out works at a time of year when vulnerable species are least likely to be present by reviewing the proposal in line with the assessments made of potential protected species or habitats onsite.

If avoidance is not possible, then it is necessary to design specific mitigation measures that will significantly reduce the impacts to the habitats in or near to the site and the species that they support, in particular the Important Ecological Features (IEFs).

7.1 Retention of habitats

It is understood that all important habitats onsite will be retained and unimpacted; these are:

- ✓ Hedgerows
- ✓ Trees
- ✓ Scrub
- ✓ Adjacent freshwater ditch

These habitats will be protected during the groundworks and construction phases of the development by the use of Construction Exclusion Zones.

7.2 Construction Exclusion Zones

Due to the potential for protected species within habitats on site, Construction Exclusion Zones (CEZs) will be required.

Habitats around the proposed construction area that are being retained will be protected from damage during construction by erecting Heras (or similar) fencing around these



features. Construction Exclusion Zones will therefore be set up along hedgerows, scrub, and the ditch, at a minimum distance of three metres from the edge of the habitat.

Construction Exclusion Zones are also required around trees, reflecting the Root Protection Area (RPA) of individual standard trees will be put in place. RPAs are calculated as an area equivalent to a circle with a radius 12 times the stem diameter of the tree. RPAs are capped at 707m², represented by circle with a radius of 15 metres where the tree is at the centre.

Temporary fencing (Heras or similar) with appropriate signage will be erected at the appropriate distance(s) (as mentioned above). The only exception to this is at existing access points. Heras fencing is not intended to restrict the access of species to other areas of the site, therefore, mindful procedure by site workers and visitors to the site is always necessary.

No development work should be undertaken within the CEZs and no materials, machinery, chemicals etc. should be stored within these zones. No development or any associated works should be located within these construction exclusion zones. Appropriate signs should be placed at regular intervals along the fencing to ensure everyone on site is aware of the CEZ and understands its relevance: for example, CONSTRUCTION EXCLUSION ZONE – NO ACCESS.

7.3 Silt Fencing

Due to the potential for protected species (water voles and amphibians, potentially including great crested newts), silt fencing will be erected along the Construction Exclusion Zones fencing (on the side closest to the ditch) during the groundworks / construction phase to avoid potential runoff of water and soil into the adjacent ditch.

7.4 Artificial Lighting Strategy

Due to value of hedgerows and scrub for foraging and navigating bats, and the trees for roosting bats, an artificial lighting strategy is required. Ideally, lighting should be kept to the minimum level permissible. It is important to avoid shining artificial lights shining on known or potential bat roosts, their access points and their flight paths.

- Lighting must be kept to a maximum of 0.5 lux within 5m of the scrub, hedgerows, and trees on site.
- Light ONLY when and where it is needed for health and safety.
- Prevent light-spill and spread: eliminate bare bulbs, upward pointing lights, keep light near to or below the horizontal. E.g. flat cut-off lanterns. Such light should be positioned to only illuminate the required areas, limiting light spill, both horizontally and vertically. Additionally, hoods, cowls, louvers and/or shields may be utilised to further direct any lighting.
- Decrease light intensity, avoid the UV spectrum: attracting insects is NOT an aim.
- Reduce height of lighting columns. Or allow for lower main beam angles to reduce glare.
- Timer switch on any proposed outdoor lighting to facilitate dark periods.

7.5 Seasonal Constraints for the Removal/Cutting-back of Woody Species

Although it is understood that scrub, hedgerow, and trees will be retained, should this not be the case, removal must take place outside of the bird nesting season (March – September



(inclusive)). This also applies to the cutting back of woody species. If removal/cutting-back outside of the bird nesting season is not possible, careful checks of the hedgerows to ensure no bird nesting is taking place must be conducted by a suitably experienced ecologist prior to works commencing. If breeding birds are found or suspected, clearance work will not be permitted until an ecologist is satisfied that breeding is complete, which may be as late as August or September.

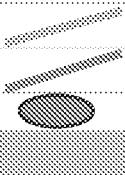
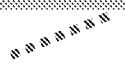
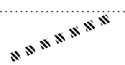
7.6 General Good Practice for Construction Sites

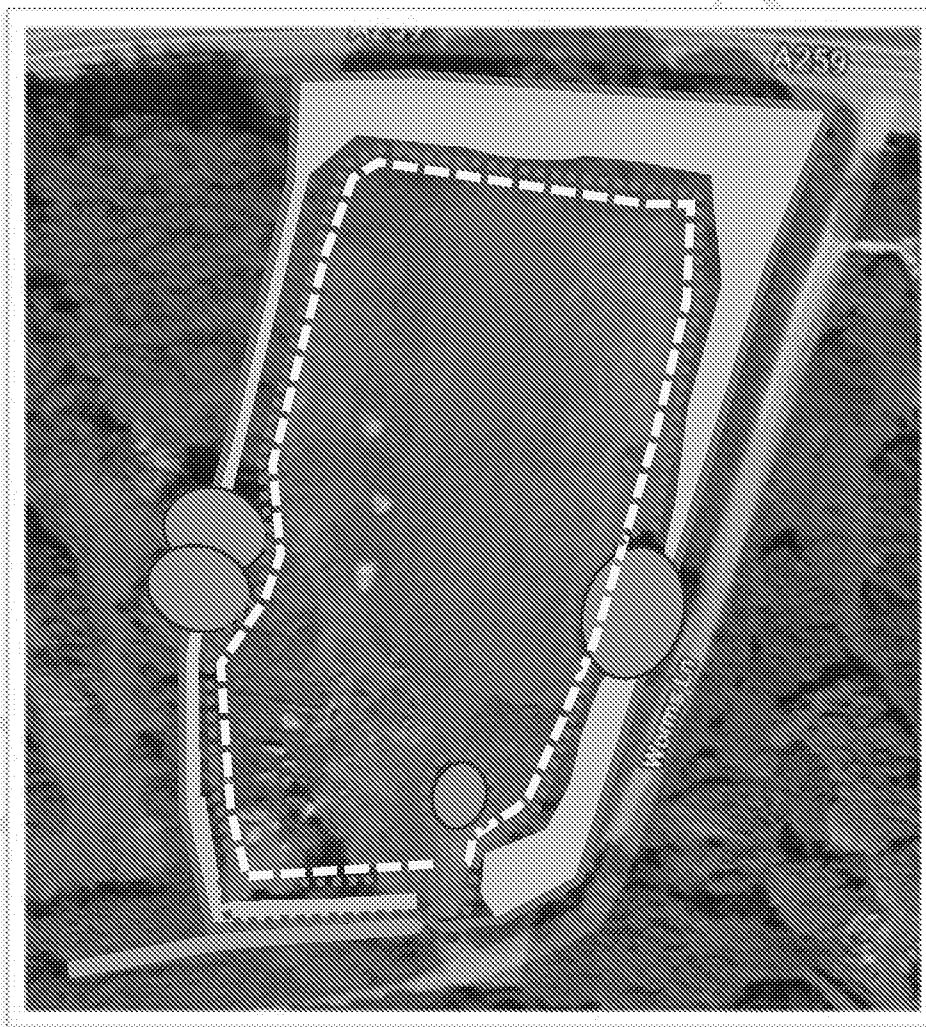
All activities on site should bear in mind the potential for wildlife or the environment being harmed through the process of development from inception to end, with a proactive approach occurring for lawful protection of wildlife and the environment regarding use of materials, machines, chemicals, and human activity on site.

- ✓ Contractors must ensure that no harm can come to wildlife by maintaining the site efficiently, clearing away any material such as wire in which animals can become entangled and preventing access to toxic substances.
- ✓ Any large bore pipes should be capped at the end of the day to reduce the potential for badgers and other wildlife entering and becoming trapped.
- ✓ If there is a substantial delay before development commences, the site should be maintained in a way that would prevent wildlife colonising it and causing constraints in the future. Such management should include mowing grassland at least twice a year and preventing scrub encroachment.
- ✓ Piles of brush wood and or log piles should be carefully inspected for signs of wildlife prior to their removal. This is especially crucial during the period March – September (inclusive) as some species of bird choose such sites to construct their nests. Ideally removal of such features should be done outside of the nesting season. If this is not possible, it is recommended that these features are covered in such a way as to exclude / prevent birds and / or reptiles taking up residence. If nesting birds or reptiles are discovered, work must cease immediately, and ecological advice sought.
- ✓ Erection of signage to inform of any Health and Safety considerations during development and post development for the benefit of residents.
- ✓ If any species is discovered during any stage of the works, any vegetation, materials etc. should be replaced to re-establish a level of cover allowing the animal to move away of its own accord. If required further advice should be sought from Ecological Surveys Ltd (Tel: 01503 240846 or 07736 458609) or Natural England.

Figure 4. Map of Mitigation Requirements

Features are NOT to scale and their location is approximate. Also note that some mitigation measures cannot be mapped and therefore do not appear in this Figure.

Retention of Scrub, Hedgerows, Trees, and adjacent Ditch	
Seasonal Constraints for removal.	
Construction Exclusion Zone / Root Protection Areas for trees (Fenced)	
Silt Fencing	
Artificial Lighting Constraints: - Less than 0.5 lux within 5m.	



8. Further Survey Work

ODPM Circular 06/2005 'Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System' advises that the presence of a protected species is a **material consideration** that must be taken into account by the local planning authority when determining the outcome of planning applications. Where there is potential for a protected species to be present on site full survey data is necessary to properly address the impacts of the proposed development upon these species. If the survey work is not carried out before planning application is determined there is a risk that not all material considerations will have been addressed. This may cause delays in determining the outcome of the planning application while full survey data is collected and analysed.

"However, bearing in mind the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present **and** affected by the development" Defra circular 01.2005 *Biodiversity and Geological Conservation – Statutory Obligations and their Impact Within the Planning System* 2005.

8.1 Phase 2 Surveys Required

The following Phase 2 Survey is required: -

Great Crested Newt Survey

Survey work is required to determine if great crested newts are breeding in the ponds onsite or in the immediate vicinity of the site. The principal document underpinning best practice regarding great crested newt surveying and mitigation is the 2001 publication by English Nature, *Great crested newt mitigation guidelines*, as well as the standard *Standing Advice* from Natural England. A copy of the 2001 guidelines, together with other useful information on newt protection, can be downloaded at the following UK Government website link:

<https://www.gov.uk/great-crested-newts-protection-surveys-and-licences>

Environmental DNA (eDNA) is a new technique used to find out if great crested newts are using a pond. This involves the collection of a water sample from the pond in question, followed by DNA sequencing to see if the DNA of the newt is present. Water samples can only be collected between 15th April and 30th June each year.

8.2 Phase 2 Surveys which may be Required

If the avoidance of impact upon scrub, hedgerows, trees, and the ditch is not going to be possible and / or the mitigation recommended cannot be adhered to, the following surveys will be required. Reference Appendix B for the optimum times at which to undertake surveys for protected species.

Bat Emergence/Re-entry Survey

Should removal of trees with bat roosting potential be necessary, a Bat Emergence/Re-entry Survey will be required to ensure compliance with legislation and determine whether bats roosts are present. Refer to [Appendix D Bat Activity and Bat Emergence Survey Information](#).

Bat Activity Survey

Should scrub and hedgerow removal be necessary, or mitigation not be possible, a Bat Activity Survey will be required to determine how bats use the site and its immediate environs. Refer to [Appendix D Bat Activity and Bat Emergence Survey Information](#).

Dormouse Survey

Should scrub and hedgerow removal be necessary, or mitigation not be possible, a Dormouse Survey will be required to ensure compliance with legislation and ascertain the presence or absence of dormice on site.

Water Vole Survey

Should the adjacent ditch be included in proposed works and be directly impacted a Water Vole Survey will be required to ensure compliance with legislation and ascertain the presence or absence of Water Voles.

9. Enhancement for Biodiversity

There is an opportunity within the proposed development to increase biodiversity on the site through pro-active enhancement measures. The proposed enhancements for biodiversity are outlined below. [Figure 5](#) maps the biodiversity enhancement measures.

9.1 New Hedgerow Planting

Approximately 80 metres of new hedgerow will be planted onsite along the eastern boundary.

- The hedgerow should be created from planting native species ideally of local provenance.
- Use two-year-old pot grown shrubs planted in a double, staggered row at a rate of at least four plants per metre.
- Apply a layer mulch to a depth of 75mm around shrub base to suppress weeds
- Plan a monitoring programme during first year of growth. Any saplings which fail to thrive should be re-planted in order to prevent the development of gaps.
- Trim lightly during the first three years.
- Individual trees should be selected at intervals of approximately 20m to remain uncut, allowing these individuals to develop into mature trees to attract potential invertebrate prey species.
- Approximately three years following planting, an appropriate management scheme should be established to ensure that it develops into a dense hedgerow which is optimal for protected species. Refer to for [Hedgerow Management advice](#) (focusing on management to aid dormice, as well as other species).

Native woody species suitable for hedgerow planting.

Species	Notes
Oak (<i>Quercus</i> spp.)	An important source of insect food (including caterpillars). Dormice also eat oak flowers, but acorns are of little value.



Hazel (<i>Corylus avellana</i>)	The leaves provide food for the caterpillars of many moths, including the large emerald, small white wave, barred umber and nut-tree tussock. In managed woodland where hazel is coppiced, the open wildflower-rich habitat supports many species of butterfly, particularly fritillaries. Coppiced hazel also provides shelter for ground-nesting birds such as the nightingale, nightjar, yellowhammer and willow warbler. Hazel has long been associated with the dormouse (also known as the hazel dormouse). Not only are hazel nuts used by dormice to fatten up for hibernation, but in spring the leaves are a good source of caterpillars, which dormice also eat. Hazel nuts are also eaten by woodpeckers, nuthatches, tits, wood pigeons, jays and a number of small mammals. Hazel flowers provide early pollen as a food for bees. The trunks are often covered in mosses, liverworts and lichens, and the fiery milk-cap fungi grows in the soil beneath.
Honeysuckle (<i>Lonicera periclymenum</i>)	The plant's finely shredded bark is the preferred nesting material used by dormice. Honeysuckle flowers also provide food at a time when few other things are available, with berries later. The climbing strands also offer convenient routes into the trees and provide dense shelter in which to nest.
Bramble (<i>Rubus fruticosus</i> agg.)	Its flowers and fruits are very important dormouse foods and tend to be available for a long period (especially where the site has slopes which vary the amounts of sunlight on the shrubs) and the thorns provide good protection for nests. Bramble often flowers late, when many other species are over, and dormice also eat the berries and seeds in autumn. Dormice seem to thrive where blackberries are abundant, even in the absence of hazel. Bramble is best if scattered among hazels and trees.
Sycamore (<i>Acer pseudoplatanus</i>)	A valuable source of insect food and pollen. A useful tree: dormice can survive in habitats with many sycamores. However, sycamores cast a dense shade which reduces the under-storey. Thus, sycamores should be kept few and scattered, perhaps coppiced to prevent seeding and to reduce the extent of shading.
Ash (<i>Fraxinus excelsior</i>)	Ripening seeds ('keys') are eaten whilst they are still on the tree, but ash supports few food insects. The canopy does not cast a dense shade, but generally ash woodlands are not good habitat.
Wayfaring-tree (<i>Viburnum lantana</i>)	Fruits in late summer when little else may be available. Dormice eat the seeds and probably also the flowers
Yew (<i>Taxus baccata</i>)	Yew hedges in particular are incredibly dense, offering protection and nesting opportunities for many birds. The UK's smallest birds - the goldcrest and firecrest - nest in broadleaf woodland with a yew understorey. The fruit is eaten by birds such as the blackbird, mistle thrush, song thrush and fieldfare, and small mammals such as



	squirrels and dormice. The leaves are eaten by caterpillars of the satin beauty moth.
Hornbeam (<i>Carpinus betulus</i>)	Seeds are small and hard, but dormice eat them. The advantage is that they are too small to be attractive to squirrels, so they may form an alternative food where squirrels have taken most of the hazel nuts.
Broom (<i>Cytisus scoparius</i>)	Fruiting is erratic. Flowers are eaten in early summer.
Willow/Sallow (<i>Salix</i> spp.)	Unripe seeds are eaten from the flowers in early summer. Sallow also supports many insects.
Birch (<i>Betula</i> spp.)	The catkins are over too early in the year to be much use to dormice, but they can eat the seeds. These are too small to attract squirrels and may provide support where squirrels compete for hazel nuts.
Sweet chestnut (<i>Castanea sativa</i>)	Chestnuts are an excellent food source and dormice may also eat the flowers.
Blackthorn (<i>Prunus spinosa</i>)	Fruits (kernels) are eaten but the flowers come too early in the year. Dense blackthorn thickets tend to be avoided where alternative shrubs are available.
Hawthorn (<i>Crataegus monogyna</i>)	Common hawthorn can support more than 300 insects. It is the foodplant for caterpillars of many moths, including the hawthorn, orchard ermine, pear leaf blister, rhomboid tortrix, light emerald, lackey, vapourer, fruitlet mining tortrix, small eggar and lappet moths. Its flowers are eaten by dormice and provide nectar and pollen for bees and other pollinating insects. The haws are rich in antioxidants and are eaten by many migrating birds such as redwings, fieldfares and thrushes, as well as small mammals. The dense thorny foliage makes fantastic nesting shelter for many species of bird.

Hedgerow Management

Good Practice, for the Benefit of Dormice and Hedgerow Biodiversity

Ref. The Dormouse Conservation Handbook Second Edition.

1	Except where road safety or access, preclude it, hedgerows should be trimmed only every three years (or less frequently if possible) and maintained at a height of at least three, and preferably four, metres.
2	Ideally, about one third of hedgerows should be left to grow for 7 to 10 years.
3	It is important not to cut all hedgerows in an area at once, so that some heavily fruiting hedgerows are always present. As a guide, we suggest cutting only 10 to 30 per cent in any one year.



4	In some places, it may be feasible to cut only one side of the hedge, cutting the other a year or two later, thus not removing all the food sources at once and allowing some regrowth before further cutting takes place. If possible, flails should not be used to manage hedgerows.
5	Coppicing or, even better, laying should be used to manage hedgerows that become gappy or lack dense branches at their base. Fencing may be needed to prevent stock from causing damage before new growth has become established.
6	If hedgerow size needs to be reduced, it is better to avoid cutting the top and to cut one side only.
7	When creating new hedgerows, or plugging gaps in existing ones, at least five and preferably seven different shrub/tree species should be planted. The best species to plant are hawthorn (for its flowers and berries) and hazel (nuts and insects); with a diversity of other species to offer flowers insects and fruits at different times Bramble would make a valuable addition but may arrive naturally.
8	Where new roads or other developments cut across hedges, the 'loose ends' should be linked up by suitable plantings. Mixtures of hawthorn and hazel are the preferred species where early results are needed.

9.2 Pond Creation

It is understood the client intends to create a pond or series of ponds onsite.

- Any pond created should have some gently sloping sides and have some shade from trees (native), preferably on the north side. Native woody species of local provenance could be planted along with the addition of alder (*Alnus glutinosa*). If the pond is less than ten metres across it should slope to no more than a depth of 1.5 metres; if greater than 10 metres across the centre should be no more than two metres deep, so that emergent plants cannot grow, but submergent plants can thrive. The smaller the pond the greater the frequency of aftercare management required (as a general rule).
- Fish species should not be introduced, as they predate on many other forms of pond life (toad tadpoles are safe as they are unpalatable to fish)
- It is a good idea to consult the Environment Agency before any pond is created.

The link below gives some useful ideas that are of benefit to wildlife:

<https://freshwaterhabitats.org.uk/projects/million-ponds/pond-creationtoolkit/#Core>

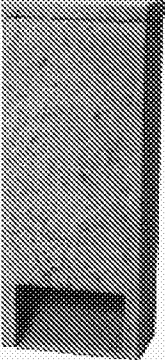
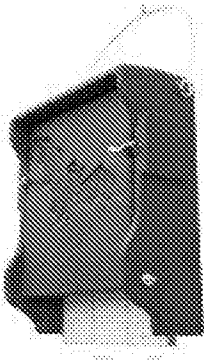
9.3 Bat Roosting Provision

One bat tube built into the new house is required (see example highlighted in yellow below). This will offer potential bat roosts and augment the natural roosting opportunities. These tubes should be built in no less than 3m high and ideally 4m plus.

- Bat tubes must be built into the fabric of the building and not bolted on to the outside and are therefore only suited to structures, not trees. A choice of styles is sometimes available, and the most suitable style can be agreed with the LPA.



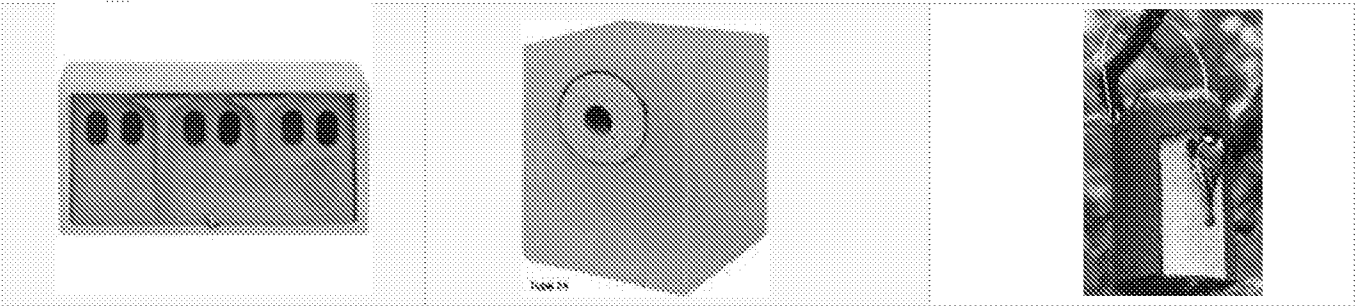
- Where bat-tubes are unsuited owing to the type of construction of the proposed structures, other bat boxes or specifically designed bat habitation of an equally durable condition may be substituted for bat-tubes (subject to LPA approval.)
- Where enhancement recommends bat tubes or bat boxes on structures, aspects of the Artificial Lighting Strategy must be followed to ensure artificial lighting does not shine on the access points /boxes or flight paths.

		
Bat Tube www.nhbs.com/title/161276/1ff-schwegler-bat-tube	General Purpose external and trees http://www.nhbs.com/browse/subject/900/bat-boxes	Ideal for high trees, steep slopes and house walls http://www.nhbs.com/title/158636/1ff-schwegler-bat-box-with-built-in-wooden-rear-panel

9.4 Bird Nesting Provisions

Two bird nesting provisions are required, one house sparrow terrace and one bird brick (see examples highlighted in yellow below). Ideally, all enhancement features should be built-in to the structure. This provides a long-lasting solution. Fixing to trees or external wall mountings will only last as long as the nail / screw or branch lasts. Often this is less than ten years. Built in features are likely to last as long as the structure they are built into which might be hundreds of years. Obviously, there may be occasions where built in solutions are not applicable. LPA approval of external mounted boxes is generally required.

- Only boxes of robust or permanent construction are suitable. Some account must be taken of the potential need to maintain and replace boxes after a number of years in use.
- Boxes should be positioned with orientation preferably between north and east with external positions of not less than 3m high to avoid cat predation and vandalism.
- Site nest boxes in locations that are accessible for maintenance, but away from bird feeders. Ideally boxes should be a discrete distance away from other nest boxes, except for house sparrows, as they like to nest in colonies.



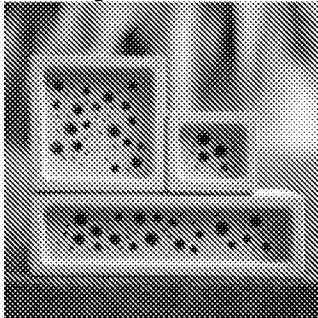


House Sparrow Terrace: http://www.nhbs.com/title/174850	24,25,26 to suit varying bird sizes: http://www.nhbs.com/title/173236/schwegler-brick-nest-boxes	Garden Birds: http://www.nhbs.com/title/158587/1b-schwegler-nest-box
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9.5 Solitary Bee Provisions

Two solitary bee provisions are required (see example highlighted in yellow below). Solitary bee bricks can also be built into buildings, walls and other structures. Each bee brick provides multiple cavities for solitary bees to lay their eggs. The bricks should ideally be built into south-facing, sunny walls, at between one and two metres above ground level and with nectar sources nearby.

Example Solitary Bee Provision



<https://greenandblue.co.uk/product/bee-brick/>

9.6 Landscaping for the Benefit of Wildlife

Landscaping in sympathy with the needs of native wildlife is relevant to all important wildlife species. It helps to support birds by providing plant species which carry seeds, fruits, nuts, and/or support insects (nectar and pollen) upon which birds feed and supports bats by attracting insects to the garden.

The list below is not exhaustive, neither is it prescriptive. The implementation of a combination of recommendations here fulfils the obligation of the client/agent to leave the site in an enhanced state.

- ✓ Plant a variety of flowering plants, biased towards native and near-native species. Exotics are not required; however, a selection of exotics to extend the flowering season and potentially provide resources for specialist groups now and in the future, is becoming increasingly important owing to climatic changes, and should be given serious consideration by any with a view to protecting and sustaining present and future biodiversity. Plant holistically for biodiversity value: nectar rich plants/shrubs which yield fruits /nuts of benefit to a multitude of species.
- ✓ Where grass is planted, use a grass mix other than low amenity lawn grass. Plant mixes with diverse grass species support a wealth of insects when allowed to seed and flower before being cut back.
- ✓ Select a variety of plants that will produce foods in different seasons. For winter residents as well as migrants that return early in spring, plants that hold their fruits throughout the winter ("winter-persistent" plants) are a vital food source.
- ✓ Leave rough areas of vegetation and native trees and shrubs around the vicinity of any replacement building will also maintain nesting opportunities.
- ✓ Avoid pesticide and insecticide use.



- Include features such as bird tables and feeders raised up or protected at the base from squirrel or cat ascent.
- Provide shelter using low shrubs, thickets or hedges where birds can nest, perch, and escape from predators.
- Leave tree stumps, dead wood (where safe to do so) tree limbs, leaf piles and compost to encourage insects and worms for birds to feed on.
- Keep a lid on any water butts.

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Figure 5. Map of Enhancement Requirements

Features are NOT to scale, and their location is approximate. Also note that some enhancements cannot be mapped accurately without a proposal map and therefore do not appear in this Figure (Landscaping for the Benefit of Wildlife, Pond Creation, Bird Provision, Bat Provision, Solitary Bee Provision). Refer to Section 9, throughout, for the complete list of requirements.

New hedgerow planting.





10. Conclusions

The following conclusions contained within the body of this report relate specifically to the brief and development proposal descriptions supplied at the time of writing. If the proposals should change, a re-appraisal or appraisal amendment may be required.

The consideration of whether ecological constraints exist to prevent this development is reserved until after all results of the further (Phase 2) surveys have been analysed, and mitigation and enhancements have been agreed. Therefore, full planning permission should be withheld pending the results of the further survey work required (Phase 2 survey work).

It is the responsibility of all those involved with the proposed development works to ensure that wildlife protection and nature conservation legislation is complied with throughout the lifespan of the development, at every stage. Care should therefore be taken during all stages of the development and if any protected are discovered they must not be handled; works must stop immediately, and advice sought from a licensed ecologist.



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Data Search Websites

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- Multi Agency Geographical Information for the countryside: www.magic.gov.uk
- UK Biodiversity Action Plan: - www.ukbap.org.uk/NewPriorityList.aspx
- Prevent the spread of harmful invasive plants: www.gov.uk/prevent-the-spread-of-harmful-invasive-and-non-native-plants
- <https://freshwaterhabitats.org.uk/projects/million-ponds/pond-creation-toolkit/#Core>

Ecological Surveys

12. Appendices

Appendix A. Flora Species Recorded Onsite

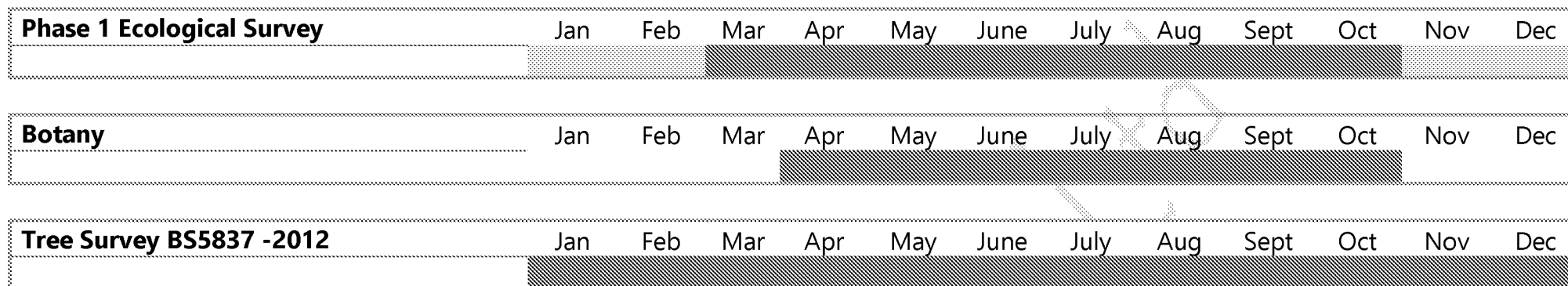
DAFOR scale: - Frequency of species on the site: **Dominant-Abundant-Frequent-Occasional-Rare.**

Seasonal constraints may mean specific species were not identifiable and may be on site but not found.

DAFOR	Common Name	Scientific Name
A	Perennial rye-grass	<i>Lolium perenne</i>
A	Yorkshire-fog	<i>Holcus lanatus</i>
F	Black poplar	<i>Populus nigra</i>
F	Cleavers	<i>Galium aparine</i>
F	Ivy	<i>Hedera helix</i>
F	Ribwort plantain	<i>Plantago lanceolata</i>
F	Stinging nettle	<i>Urtica dioica</i>
F	Willow	<i>Salix sp.</i>
F	Yarrow	<i>Achillea millefolium</i>
O	Bramble	<i>Rubus fruticosus</i> agg.
O	Bristly oxtongue	<i>Helminthotheca echioides</i>
O	Broad-leaved dock	<i>Rumex obtusifolius</i>
O	Garden privet	<i>Ligustrum ovalifolium</i>
O	Ground ivy	<i>Glechoma hederacea</i>
O	Hawthorn	<i>Crataegus monogyna</i>
O	Holly	<i>Ilex aquifolium</i>
O	Lesser celandine	<i>Ficaria verna</i>
O	Oak	<i>Quercus sp.</i>
O	Prickly sow thistle	<i>Sonchus asper</i>
O	Silver birch	<i>Betula pendula</i>
O	Speedwell sp.	<i>Veronica sp.</i>
O	Wild carrot	<i>Daucus carota</i>
R	Bedstraw sp.	<i>Galium sp.</i>
R	Blackthorn	<i>Prunus spinosa</i>
R	Buddleja	<i>Buddleja sp.</i>
R	Geranium sp.	<i>Geranium sp.</i>
R	Hogweed	<i>Heracleum sphondylium</i>
R	Male fern	<i>Dryopteris filix-mas</i>
R	Poplar sp.	<i>Populus sp.</i>

Appendix B. Optimum Protected Species Survey Times

BATS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bat Scoping												
Bat Emergence												
Bat Activity												
Bat Hibernation												
BIRDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Birds Breeding												
Birds -Other												
GREAT CRESTED NEWTS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
GCN - Habitat Assessment												
GCN - Presence / Absence												
eDNA – Survey												
AQUATIC ANIMALS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Water Vole												
White Clawed Crayfish												
Otter												
DORMOUSE	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
REPTILE	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
BADGER	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec



Dark Green = Approximate Optimal Survey Period Light Green = Approximate Sub-Optimal Survey Period.

Owing to the vagaries of the English climate and the seasonal variation between different parts of the Country, the optimal Survey period might vary by several weeks from this calendar. This should be borne in mind when determining Planning Applications

Appendix C. Assessing the Potential Value for Buildings for Roosting Bats

Survey Method of Buildings.

Where appropriate, the building exteriors and interiors are searched visually, using binoculars, for field evidence of bats, with particular attention being paid to sheltered areas such as window ledges and pipes where bat droppings might lie undisturbed from the weather, insect prey remains, urine stains, oil stains from bats repeatedly moving over a small area and polishing the surface, and the potential presence of bats either dead or alive.

Classification Criteria

It should be noted that the grading system below only reports on the situation at the time of survey; should bat activity levels change after the initial survey, or should the buildings be modified (for example if roof tiles are removed or fascia boards develop cracks), the category may need revision.

Category (Potential value)	Description
Please note: Intermediate categories (e.g. Low – Moderate value) may apply.	
No/Negligible value	Buildings with no or very few features capable of supporting roosting bats. Often buildings are of 'sound' well- sealed structure or have a single skin and no roof void. They tend to have high interior light-levels, and little or no insulation. Buildings without any roofs may also fall into this category.
Low value	Buildings of largely unsuitable construction, but with a few features of potential value to bats (e.g. gaps above windows, apparently shallow crevices). No supporting evidence (e.g. droppings / staining) found. Buildings may be surrounded by poor or sub-optimal bat foraging habitat, as is often the case in urban-centre locations.
Moderate value	Buildings usually of brick or stone construction with a number of features of obvious potential value to roosting bats e.g. loose roof / ridge tiles, gaps in brickwork, gaps under fascia boards, and/or warm sealed roof-spaces with under-felt.



High value	Buildings with a large number of features of obvious potential value to bats (as above). Bats may be suspected to roost within the building (at least at certain times of year), but no supporting evidence found.
Confirmed roost	Bats discovered roosting within the building or recorded emerging from / entering the building at dusk and / or dawn. Building found to contain conclusive evidence of occupation by bats, such as bat droppings. A confirmed record (as supplied by an established source such as the local bat group) would also apply to this category.

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Appendix D. Bat Activity and Bat Emergence Survey Information

Survey Method of Buildings.

Where appropriate, the building exteriors and interiors are searched visually, using binoculars, for field evidence of bats, with particular attention being paid to sheltered areas such as window ledges and pipes where bat droppings might lie undisturbed from the weather, insect prey remains, urine stains, oil stains from bats repeatedly moving over a small area and polishing the surface, and the potential presence of bats either dead or alive.

BCT Tree Categories 2016

- ✿ **1*** - Tree with multiple, highly suitable features capable of supporting larger roosts.
- ✿ **1** - Tree with definite potential, supporting fewer suitable features than Category 1* trees or capable of supporting roosts for single/low numbers of bats.
- ✿ **2** - Tree with no obvious potential for roosting bats although due to its size and maturity the tree may support some features with limited potential to support bats.
- ✿ **3** - Tree with no roosting potential.

Development and Planning Trigger for Bat Surveys Bat Emergence

The Emergence Surveys are required to confirm the species, extent of use (in terms of numbers of bats), type of bat use (in terms of seasonality and functionality of use) and bat access points. These details are required to ascertain the requirement for a Natural England EPSL and to provide the information **required by Natural England should** an application prove necessary.

It is dependent upon the results of Emergence Surveys as to whether Natural England (NE) European Protected Species Licences (EPSL) will be required prior to any construction work commencing. Protected Species surveys, such as bat emergence surveys, cannot be conditioned by the LPA and must be completed prior to Planning Applications being determined. Bat Conservation Trust (BCT) guidelines recommend the level of Bat Emergence Surveys required for each circumstance.

Development and planning trigger list for bat surveys, which can be adapted to local circumstances, taken from the Association for Local Government Ecologists (ALGE) template for biodiversity and geological conservation validation checklists 2007, available from <http://alge.org.uk/publications/index.php>

(1) **Conversion, modification, demolition or removal of buildings (including hotels, schools, hospitals, churches, commercial premises and derelict buildings) which are:**

- Agricultural buildings (e.g. farmhouses, barns and outbuildings) of traditional brick or stone construction and/or with exposed wooden beams;
- Buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water;



- Pre-1960 detached buildings and structures within 200m of woodland and/or water;
- Pre-1914 buildings within 400m of woodland and/or water;
- Pre-1914 buildings with gable ends or slate roofs, regardless of location;
- Located within, or immediately adjacent to woodland and/or immediately adjacent to water;
- Dutch barns or livestock buildings with a single skin roof and board-and-gap or Yorkshire boarding if, following a preliminary roost assessment, the site appears to be particularly suited to bats.

(2) **Development affecting built structures:**

- Tunnels, mines, kilns, ice-houses, adits, military fortifications, air-raid shelters, cellars and similar underground ducts and structures; unused industrial chimneys that are unlined and brick/stone construction;
- Bridge structures, aqueducts and viaducts (especially over water and wet ground).

(3) **Floodlighting of**

- Churches and list buildings, green space (e.g. sports pitches) within 50m of woodland, water, field hedgerows or lines of trees with connectivity to woodland or water;
- Any building meeting the criteria listed in (1) above.

(4) **Felling, removal or lopping of:**

- Woodland;
- Field hedgerows and/or lines of trees with connectivity to woodland or water bodies;
- Old and veteran trees that are more than 100 years old;
- Mature trees with obvious holes, cracks or cavities, or that are covered with mature ivy (including large dead trees).

(5) **Proposals affecting water bodies:**

- In or within 200m of rivers, streams, canals, lakes, reed beds or other aquatic habitats.

(6) **Proposal located in or immediately adjacent to:**

- Quarries or gravel pits;
- Natural cliff faces and rock outcrops with crevices or caves and swallets.

(7) **Proposals for wind farm developments**

- of multiple wind turbines and single wind turbines (depending on the size and location) (NE TIN 051 – undergoing updates at the time of writing)

(8) **All proposals in sites where bats are known to be present¹**

- This may include proposed development affecting any type of buildings, structures, features or location.

Notes:

1. Where sites are of international importance to bats, they may be designated as SACs. Developers of large sites 5-10km away from such SACs may be required to undertake a HRA.

**BCT Emergence and Activity Guidelines****Bat Emergence Survey Requirements**

Extracted from - Table 7.3 & 7.1 BCT Recommended Minimum Survey Effort

Low Roost Suitability	Moderate Roost Suitability	High / Confirmed roost Suitability
One Survey visit – One dusk or dawn re-entry survey	Two separate survey visits – One dusk and one dawn re-entry survey	Three separate survey visits – at least one must be a dawn re-entry and one a dusk emergence, the other can be either.

Structures that have been categorized as low potential can be problematic and the number of surveys required should be judged on a case by case basis. If there is a possibility that quiet calling, late emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

Multiple survey visits should be spread out to sample as much of the recommended survey period as possible, it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

EMERGENCE – RE-ENTRY Survey Dates

May to August (structures) No further survey required (trees)	May to September with at least one between May and August	May to September with at least two, between May and August
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September surveys are both weather and location dependent. Conditions may become unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season. Multiple survey visits should be spread out as much as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more, unless there are specific ecological reasons for the surveys to be closer together (for example a more accurate count of a maternity colony is required but it is likely that the colony will soon disperse) if there is potential for a maternity colony then consideration must be given to detectability. A survey on 31st august followed by a mid-September survey is unlikely to pick up a maternity colony. An ecologist should use their professional judgement to design the most appropriate survey regime.

Bat Activity Survey Requirements

Extracted from - Table 8.3. BCT Recommended Minimum Survey Effort.

Transect/spot count/timed search surveys

Low Habitat Value	Moderate Habitat Value	High / Confirmed Habitat Value
One Survey visit per season (Spring- April/May, summer- June/July/August, autumn- September/October) in appropriate weather conditions for bats. Further surveys may be required if these survey visits reveal	One survey visit per month (April to October) in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24 hr period.	Up to two survey visits per month (April to October) in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24hr period.



higher levels of bat activity than predicted by habitat alone.		
Automatic / static bat detector surveys		
One location per transect, data to be collected on five consecutive nights per season (spring- April/May; summer- June/July/August; autumn- September/ October) in appropriate weather conditions for bats.	Two locations per transect, data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats.	Three locations per transect; data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats)
Refer to BCT guidelines document Table 8.3 for further details and dependent conditions where the survey effort is not straightforward.		



Appendix E. Wildlife Crime

<http://www.nwcu.police.uk/what-is-wildlife-crime/>

In general, wildlife crime is any action which contravenes current legislation governing the protection of the UK's wild animals and plants.

A wildlife crime may also be reported and recorded where advice has been given regarding the potential or actual presence of a protected species within a habitat with that habitat then removed/impacted causing actual disturbance/harm/death to that species. Examples in relation to this report may be seasonally pertinent but could include cutting back or removal of a hedgerow where birds and dormice are nesting; removing or doing works to trees where bats roost; cutting grass where reptiles such as slow-worms are inhabiting; filling in or blocking access to badger setts. Specific legislation should be referred to regarding the protection of any animal species or habitat.

Appendix F. Planning Policy and Legislation

Hedgerows

Any hedgerows classified as 'important' under the 1997 Hedgerows Regulations cannot be removed without a Hedgerow Removal Notice issued by the relevant Local Authority unless previously approved as part of a planning permission. The UK Biodiversity Action Plan (BAP) now classifies any native hedge over 20m in length as a priority habitat feature. Priority hedgerows should be those comprising 80% or more cover of any native tree/shrub species. The Local Authority is the arbiter as to classification of hedgerows

Plants

Local Planning Authorities are charged with the responsibility for protection of endangered species under the European Union Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC). This Directive is implemented in the UK by the Conservation (Natural Habitats & Conservation) Regulations 1994 (Statutory Instrument No 2716) amended in 1997. The presence of a protected species is a material consideration when a local authority is considering a planning application that could affect any protected species.

EU Regulation (1141/2014) on invasive alien (non-native) species

This imposes restrictions on a list of species known as 'species of Union concern', published in Commission Implementing Regulation 2016/1141. These are species whose potential adverse effects across the European Union are such that concerted action across Europe is required. The list is drawn up by the European Commission and managed with Member States using risk assessments and scientific evidence. For more information and FAQs from the Commission visit their website here, the UK has also produced its own FAQ for UK stakeholders which can be found here.

The Wildlife and Countryside Act 1981 (WCA) is the principal legislation dealing with non-native species. The WCA has been amended in relation to England and Wales by various pieces of legislation, including the Wildlife and Countryside Act 1981 (Variation of Schedule 9) (England and Wales) Order 2010, the Natural Environment and Rural Communities Act 2006 and the Countryside and Rights of Way Act 2000.

Section 14(4A) of the Wildlife and Countryside Act (WCA) as inserted by section 23 of the Infrastructure Act 2015, enables species control agreements and orders to be made by environmental authorities to ensure that landowners take action on invasive non-native species, or permit others to enter the land and carry out those operations, to prevent their establishment and spread. The intention is that these provisions should be used primarily to support national eradication programmes, usually used to remove newly arrived invasive non-native species or those of relatively restricted distribution. In general, it would not be an appropriate use of these powers or an effective use of resources to seek to apply these orders to invasive non-native species that have become widespread.

"However, bearing in mind the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by the development", Defra circular



01.2005 Biodiversity and Geological Conservation – Statutory Obligations and their Impact Within the Planning System 2005.

The National Planning Policy Framework (NPPF) sets out the national planning policy which is committed to minimising impacts on biodiversity and providing net gains in biodiversity where possible. Under NPPF, local planning authorities have an obligation to promote the preservation, restoration and recreation of priority habitats, ecological networks and the protection and recovery of priority species as identified under the Natural Environment and Rural Communities Act (2006). Local Planning Authorities will seek to produce a net gain in biodiversity, by requiring developers to design wildlife into their plans and to ensure that any unavoidable impacts are appropriately mitigated for.

The Wildlife and Countryside Act 1981 makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant (without permission). Schedule 8 plant species are protected under Section 13. Section 13 protects plants from:

- picking and sale of plants or parts of plants listed in Schedule 8,
- intentional picking, uprooting or destruction (Section 13 1a),
- selling, offering for sale, possessing or,
- transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a);
- advertising (any of these) for buying or selling (Section 13 2b)

Certain plant species are also afforded protection under the EC Habitats and Species Directive (92/43/EC).

Invasive Non-Native Plants:

Under Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) it is a criminal offence to cause any of 48 non-native plant species (6/4/2010) and (non-native animals) to spread into the wild where they cause damage to the environment/ economy/health/lifestyle.

The site owner has a responsibility to:

- Prevent invasive, non-native plants on their land spreading into the wild and causing a nuisance.
- Prevent harmful weeds on their land spreading onto a neighbour's property

The owner of the site must not plant in the wild or cause certain invasive and non-native plants to grow in the wild. This can include moving contaminated soil or plant cuttings. If this occurs there is a fine or prison term for up to 2 years.

Commonly found invasive, non-native plants include:

- Giant hogweed
- Himalayan balsam
- Rhododendron ponticum
- Garden Yellow Archangel
- New Zealand pigmy weed (this is banned from sale)
- Montbretia
- Japanese Knotweed (see additional details below)



The site owner is not legally obliged to remove these plants or to control them on site. However, at the point of change: **development, mulching, earth moving operations**: it is important that they are identified, and their spread controlled in the most appropriate way. Environmental Protection Act 1990 allows for the potential classification of soil and other waste containing viable propagules of invasive non-native plant species as controlled waste. This has been applied to Japanese Knotweed *Fallopia japonica*, with the result that waste containing this species must be disposed of in accordance with the duty of care set out in section 34 of the Act. The Environment Agency have issued guidance which will be of use in complying with the duty of care.

In addition:

- Any Schedule 9 plant material, or soil containing root or rhizome fragments, may be classified as 'controlled waste' under the Environmental Protection Act 1990 (EPA).
- In addition to a criminal prosecution under the Wildlife & Countryside Act, infringement of the EPA can result in an *unlimited fine*.
- The owner may also be held liable for costs incurred from the spread into adjacent properties and for disposal of contaminated soil off site during development, which later leads to the spread on another site.

Anti-social Behaviour, Crime and Policing Act 2014

This enables community protection notices to be served by local authorities or the Police against individuals who are acting unreasonably and who persistently or continually act in a way that has a detrimental effect on the quality of life of those in the locality. These powers are designed to be flexible and could be used to address specific problems caused by widespread species such as **Japanese knotweed**.

Prevent the Spread of Harmful Weeds

A number of weeds are a danger to animals, or cause problems for agricultural production if left to spread unchecked. The following weeds are controlled by law:

- Common ragwort
- Spear thistle
- Creeping or field thistle
- Broad-leaved dock
- Curled dock

It's not an offence to have these weeds growing on owned land, however, a duty of responsibility exists to:

- Stop them spreading to agricultural land, particularly grazing areas or land used for forage, like silage and hay
- Choose the most appropriate control method for site development e.g. If it is a protected site
- Not plant them in the wild



If weeds are allowed (deliberately or inadvertently) to spread onto someone else's property, Natural England could serve an enforcement notice.

Prosecution may occur if animals suffer by eating these weeds as a result of negligence.

Refer to www.gov.uk/prevent-the-spread-of-harmful-invasive-and-non-native-plants for further advice and <http://www.nonnativespecies.org/home/index.cfm>

Animals

Badgers

Badgers are protected by the Bonn Convention on Conservation of Migratory Species of Wild Animals Protection of Badgers Act (1992) and transcribed into UK Law by the Wildlife and Countryside Act (1981), Schedule 6. Under the Wildlife and Countryside Act it is illegal to intentionally kill, capture, injure or ill-treat any badger. Under the Protection of Badgers Act, it is an offence to obstruct, destroy or damage a badger sett or disturb badgers within a sett. Disturbance is defined, for development purposes, as any activity that could damage a sett or be greater than what badgers commonly tolerate. Badgers are seen to be tolerant of low-moderate disturbance levels, especially where disturbance is regular, such as under road or railway lines.

This is only a guide to the main provisions of the law. Natural England does not provide legal advice to developers and the text of the Act should be consulted and professional legal advice sought for exact interpretations of offences and defences. The Protection of Badgers Act 1992 is based primarily on the need to protect badgers from baiting and deliberate harm or injury. It also contains restrictions that apply more widely, and it is important for developers to know how this may affect their work. All the following are criminal offences: to

- Wilfully Kill, Injure, Take, Possess OR Cruelly ill-treat a badger;
- Attempt to do so
- Intentionally or recklessly interfere with a sett.

Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the Sett is not damaged or obstructed.

Since development operations may take place over a protracted period, Natural England recommends that plans consider the effect of the development on seasonally-used setts as well as currently occupied setts. If a sett has shown signs of occupation within the past few months, it could be in use by badgers when development starts and should therefore be taken into account during the survey and any planning stages of the development. Where interference with a sett showing signs of use cannot be avoided during the development, a licence should be sought from Natural England.

Penalties for offences can be severe with fines of up to £5,000 plus up to six-month imprisonment, for each illegal sett interference, or badger death or injury. The legislation does, however, recognise the need for a range of legitimate activities to be carried out and allows licences to be granted for certain purposes permitting work that would otherwise be illegal. The purposes for which licences can be granted include:

- Preventing serious damage to land, crops, poultry or any other form of property (e.g. a house, garden, road etc.)
- Any agricultural or forestry operations



- Any operation to maintain or improve any existing watercourse or drainage works, or to construct new works required for the drainage of land, including works of defence against sea or tidal water
- Preventing the spread of disease
- Development
- Scientific or educational purposes, or conservation
- Preservation or archaeological investigation of scheduled ancient monuments

Natural England will normally only issue a licence after detailed planning permission has been granted, where applicable, so that there is no conflict with the planning process. Licences will only be issued in advance of full planning permission in exceptional circumstances. Local authorities and developers need to be aware that it may be necessary for an environmental assessment to be carried out, prior to the development, if the proposed development site hosts badgers. Before the planning application is determined, the local planning authority should request a detailed ecological survey/report and developers should be prepared to provide the following information:

- The numbers and status of badger setts and foraging areas that are affected by the proposal;
- The impact that the proposal is likely to have on badgers and what can be done by way of mitigation;

Judgment on whether the impact is necessary or acceptable; and a recommendation as to whether a licence will be required.

Planning Permission and badger licensing are separate legal functions. Thus, receiving planning permission from the Local Authority is no guarantee that development operations will not breach the Protection of Badgers Act 1992. Similarly planning permission does not guarantee that a badger licence will be granted. It is important, therefore, that developers take adequate account of badgers at the planning stage in order to ensure that badgers will not be affected or, where a licence is required, that appropriate mitigation measures can be implemented.

Bats

All species of bat, their habitat and roosts are protected by the UK Wildlife and Countryside Act (1981) and the EC Habitats and Species Directive (92/43/EC), enacted in the UK by the Conservation of Habitats and Species Regulations (2010).

All British bats are European protected species (EPS), included on Annex IV (a) of the European Communities Habitats Directive. Annex IV (a) species are protected in this country under Schedule 2 of the Conservation of Habitats and Species Regulations 2010. Additionally, bat species in the UK are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and Schedule 12 of the Countryside Rights of Way Act 2000. In combination, this makes it an offence to:

- Deliberately* kill, injure or capture bats;
- Intentionally or recklessly disturb a bat in its roost, or deliberately disturb a group of bats;

Intentionally or recklessly damage, destroy or obstruct access to a bat roost (a bat roost is interpreted as any structure or place which is used for shelter or protection, regardless of whether bats are present at the time or not);



- Possess or transport a bat or any part of a bat, unless acquired legally; and
- Sell, barter or exchange bats or parts of bats.

*In a court, 'deliberately' may be interpreted as someone who, although not intending to capture/injure or kill a bat, performed the relevant action, being sufficiently informed and aware of the consequence his/her action will potentially have.

Dormice/Otters

Otter and dormice habitat are afforded protection under UK and EU legislation and are protected by the UK Wildlife and Countryside Act (1981) and the EC Habitats and Species Directive (92/43/EC), enacted in the UK by the Conservation of Habitats and Species Regulations (2010).

Hazel dormice, their breeding sites and resting places are protected by law.

A licence may be obtained from Natural England if disturbance or habitat damage cannot be avoided.

It is illegal to:

- Capture, kill, disturb or injure hazel dormice (on purpose or by not taking enough care)
- Damage or destroy a breeding or resting place (even accidentally)
- Obstruct access to their resting or sheltering places (on purpose or by not taking enough care)
- Possess, sell, control or transport live or dead hazel dormice, or parts of hazel dormice

And may result in a 6-month prison term and a fine of £5,000 for each offence.

Activities that can harm hazel dormice:

Hazel dormice can be affected by:

- Handling
- Disturbance, e.g. Noise and light, woodland and hedgerow management
- Habitat removal, clearing woodland and removing hedgerows

In most cases, it should be possible to avoid harming the hazel dormice, damaging or blocking access to their habitats.

Birds

All British birds, their nests and eggs are protected in law. It is an offence to deliberately take, kill or injure any wild bird or to take, damage, or destroy any nest or egg of any wild bird under Part 1 of the Wildlife and Countryside Act 1981 (as amended). However, Schedule 1 provides an additional tier of protection so that rare species are especially protected by increased penalties and cannot be intentionally or recklessly disturbed when nesting.

Reptiles and Amphibians

In addition to the planning implications, it should be noted that all species of reptile and amphibian are protected by the UK Wildlife and Countryside Act (1981), under Schedule 5. Reptiles such as adder, common lizard, slow worm and grass snake are protected against intentional killing, injuring or selling. Species such as the smooth snake, sand lizard and great crested newt are also protected by European legislation as above.



Other species have even greater protection. Failure to take appropriate action to protect reptiles may result in a criminal prosecution.

Invertebrates

A number of invertebrates, including the white-clawed crayfish, are protected by the UK Wildlife and Countryside Act 1981 (as amended), under Schedule 5.

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Appendix G. Habitats Regulation Assessment (HRA)

Appropriate assessment (or 'Habitats Regulation Assessment', HRA) is one of the most powerful tools currently available to control the environmental impacts of development. Whereas sustainability appraisal is a decision-informing tool, appropriate assessment is often described as a decision-making tool because it has the potential to stop development.

Appropriate assessment tests whether a plan or a project is likely to have a significant negative impact on any:

- Special Protection Area (SPA) – a European designation which protects birds
- Special Area of Conservation (SAC) – a European designation which protects habitats
- RAMSAR site – a European designation which protects wetlands.

Jointly, these are called 'European sites'. Appropriate assessment does not apply to other designations, like Sites of Special Scientific Interest (SSSI) or Areas of Outstanding Natural Beauty (AONB).

If the proposed development has the potential to impact upon any of the European sites, the LPA can request an HRA be conducted. The responsibility for conducting such an HRA lies with the LPA, but they can insist that all relevant information is provided to them by the developer.

Proximity to a site is not the defining factor, potential 'impact' is, and for large projects this could be up to 15km from the site. The closer to a protected site, the more likely it is that an HRA will be required, even for a very small site.



Appendix H. Bat Roost Warning Sign

Please print off the below and attached it to any loft hatches or other human access points into a known bat roost.

Bat Conservation Trust

Tel: 0345 1300 228 www.bats.org.uk



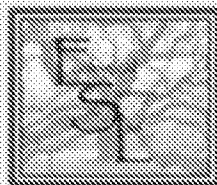
Natural England Tel: 0300 060 3900

<https://www.gov.uk/government/organisations/natural-england>

KNOWN BAT ROOST

ALL BATS AND THEIR ROOSTS ARE
PROTECTED BY LAW

**DO NOT ENTER UNLESS YOU ARE A BAT
LICENCE HOLDER or HAVE A BAT LICENCE
HOLDER PRESENT**



*This notice should be displayed prominently to prevent
unauthorised and illegal entry into a known bat roost*