



MR A CARTER

THE LAURELS, DAPPERS LANE, ANGMERING

- Preliminary Ecological Appraisal Survey
- Preliminary Protected Species and Bat Roost Assessment Survey

Planning Issue

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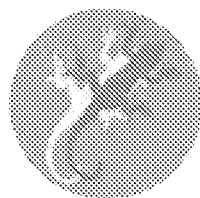
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L I Z A R D

Landscape Design and Ecology

The Old Bank, 34 South Street, Tarring, Worthing, West Sussex, BN14 7JH

SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Mr A Carter to undertake a Preliminary Ecological Appraisal Survey and Preliminary Protected Species Assessment Survey of land and buildings at The Laurels, Dappers Lane, Angmering (*Grid Reference: TQ 073 048 – hereafter referred to as 'the site'*). A preliminary ecological appraisal (*PEA*) of the site was undertaken on 8th March 2018, to appraise the existing ecological resource within the site and the surrounding area.

The site comprises a detached house with associated access paths and driveway, garage and outbuildings; large mature gardens; and a field of grass and ruderal plants, with scattered trees and a small area of plantation woodland.

The following recommendations are made for the site, with regards to protected species:

The field and marginal habitats on the site are considered suitable for reptiles; a full reptile survey is recommended to determine whether reptiles are present and devise a suitable mitigation plan for the proposals.

There are several ponds within the local area, and the site contains suitable terrestrial habitat for amphibians. Surveys undertaken in 2016 for other developments within Angmering have not discovered the presence of Great Crested Newts within these ponds and as such no further survey is recommended for Great Crested Newts.

A number of droppings indicative of pipistrelle bats were noted within the roof of the main house. The house is considered therefore to offer '*high*' bat roost potential. The garage is also considered to offer '*low*' bat roost potential. It is understood that the house and surroundings are to be retained as they are; no further survey is therefore recommended for the house, however, where possible linear vegetation should be retained within the proposals so that the commuting routes of any bats present are not disrupted. No other buildings offer any bat roost potential, and the trees on the site offer no significant bat roost potential.

The eastern section of the site, and linear boundary vegetation might offer some potential foraging habitat for bats. Given the scale of the site and the surrounding area, this loss is not considered to be significant. Boundary vegetation should be retained and reinforced with native species where possible. In particular, the native boundary hedging and at least part of the tree area to the east of the site should be retained.

The trees, hedges and shrubs all offer potential for bird nesting. Vegetation clearance should take place outside the bird nesting season (*bird nesting season: March – August inclusive*) or following inspection by the *Suitably Qualified Ecologist*.

The grassland field to the east of the site should either be kept mown short or inspected prior to clearance, to avoid the risk of disturbing ground nesting birds. The dovecote, any nest boxes and **Building B4** should be removed outside of the bird nesting season (*bird nesting season: March – August inclusive*); the dovecote could be relocated to within the garden, or completely removed. If birds are present year-round, advice should be taken from a local pigeon-keeping group as to the best way to carry this out, without disturbing birds nesting within the dovecote.

1.0 INTRODUCTION

1.1 Lizard Landscape Design and Ecology has been commissioned by Mr A Carter to undertake a Preliminary Ecological Appraisal Survey and Preliminary Protected Species Assessment Survey of land and buildings at The Laurels, Dappers Lane, Angmering (*Grid Reference: TQ 073 048 – hereafter referred to as 'the site'*).

1.2 A preliminary ecological appraisal (*PEA*) of the site was undertaken on 8th March 2018, to appraise the existing ecological resource within the site and the surrounding area. The *PEA* comprised a baseline survey conforming broadly to the *JNCC Ecology Phase 1 Habitat Survey protocol*, to identify the existing habitats. In addition, a protected species assessment was undertaken to identify the potential for European and nationally protected species within and adjacent to the land.

1.3 The field survey data and analysis contained in this report were undertaken and prepared by George Sayer (*Project Ecologist; PgDip; BSc(Hons); Lizard Landscape Design and Ecology*). The report has been reviewed by Joe Jackson (*Principal; Landscape Architect BA (Hons) LA DipLA CMLI; Lizard Landscape Design and Ecology*).

Site Information

1.4 The site is a rectangular plot, perpendicular to the east of Dappers Lane. The site comprises a detached house, with associated access paths and driveway, garage and a number of outbuildings; large mature gardens; and a field of grass and ruderal plants, with scattered trees and a small area of plantation woodland. The boundaries are lined with deciduous and coniferous treelines, hedges, brick walls and post and wire fences. The site is approximately 0.8 hectares (*ha*) in size and is approximately 18.8 metres (*m*) above sea level. The site is located to the north-eastern edge of the village of Angmering.

1.5 Soils on site are described as *freely draining slightly acid loamy soils*.

Surrounding Landscape

- 1.6 The surrounding landscape is of mixed use. The site is located to the north-eastern edge of the village of Angmering; the surroundings were historically used for plant nurseries and light industrial use. The land-use is currently changing to largely residential use as the village of Angmering expands. Angmering is surrounded to the east and west largely by arable land and patches of woodland; it is connected to more continuous coastal development at its southern extent. The A27 dual carriageway is 720.0 m to the north. The nearest woodland is 374.0 m to the north of the site; this is designated as *Deciduous Woodland* forming *Poling Furzefield*. The nearest patch of *Ancient Woodland* is *Groom's Copse (7.5 Ha)*, situated 437.0 m to the north-east; *Ancient Woodland* is generally more extensive to the north and east.
- 1.7 Several water bodies are present within 500.0 m of the site. These include a ditch / stream which runs continuously along the side of the A280, 137.0 m to the south-east; a fishing pond 174.0 m to the south; and a wetland area with balancing ponds, 234.0 m to the east. The site is separated from the water bodies by adjacent properties and Water Lane.

Development Proposals

- 1.8 The proposals include the construction of 9 no. new build 2 / 3 / 4-bedroom dwellings; the dwellings will be accompanied by a new access road and walkway; access paths; parking areas; gardens and open / amenity space. The existing dwelling and its immediate gardens would be retained through the proposals. It is determined that the majority of the boundary vegetation will be retained within the final development scheme, and reinforced where appropriate. The other vegetation and habitats within the site would require removal; this would result in the loss of the field; large areas of introduced shrubs and scrub; sections of intact, species-poor hedge and a number of scattered trees.

2.0 SCOPE OF THE SURVEY

- 2.1 The aim of the preliminary ecological appraisal survey has been:
- *To identify and display the main habitat types and plant communities;*
 - *To provide a species list for the major habitats;*
 - *To identify habitats with potential for protected species;*
 - *To provide recommendations for surveys of protected species and / or ecological enhancement / compensation.*
- 2.2 This report establishes the potential ecological resource within the site and outlines where any ecological constraints may occur.

3.0 METHODOLOGY

- 3.1 A preliminary ecological appraisal was undertaken on 8th March 2018, and the site subjected to an ecology survey using guidelines set out in the *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit (JNCC, 2003)*. This has resulted in a Site Habitat Plan (*Figure No. 01*); Species Lists for Habitat Parcels (*Table No. 02*) and Target Notes (*Table No. 03*) for each site area.
- 3.2 Habitats within the land were classified and the presence, or potential presence, of certain protected and / or notable species of flora and fauna were identified. A summary description of the habitat within the site following the *Phase 1 Habitat Survey Methodology* is presented in Section 4.0. This involved identifying features that may be used by protected species, potential foraging areas and other signs of use. Water bodies were recorded wherever possible, within 500.0 metres of the proposed development site.
- 3.3 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants, may not have been visible or may have been otherwise inconspicuous at the time of the survey and hence overlooked. These are accepted constraints associated with the standard *Phase 1 Habitat Survey Methodology*.

- 3.4 A desk study, consisting of searches of the *Multi-Agency Geographic Information for the Countryside (MAGIC)* GIS mapping website was undertaken. This search focussed on an area of influence of 2.0 km around the proposal site, and considered statutory and non-statutory protected sites, priority habitats and potential for priority species.
- 3.5 The results are summarised and accompanied in large part by photographic evidence contained in *Appendix A – Site Photographs*. Recommendations for further investigation and survey are made in the following report.

Preliminary Bat Roost Assessment Survey

- 3.6 A preliminary bat roost assessment survey was undertaken on 8th March 2018, by an experienced bat surveyor who undertook an internal and external examination of the existing buildings on site. The bat surveyor assessed the existing buildings visually and searched for evidence such as:
- *Staining beneath or around a hole caused by natural oils in bat fur;*
 - *Bat droppings beneath a hole, roost, or resting area;*
 - *Bat droppings and / or insect remains beneath a feeding area;*
 - *Audible squeaking from within a hole;*
 - *Insects (especially flies) around a hole;*
 - *Dead bats.*
- 3.7 Trees were visually identified from the ground, using binoculars where necessary, for features that could be used by bats such as:
- *Woodpecker Holes;*
 - *Knot Holes;*
 - *Tear-outs;*
 - *Flush Cuts;*
 - *Double Leaders;*
 - *Dense Ivy Covering.*

- 3.8 Once features had been assessed, trees / buildings were then categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016) (shown below)*:

Category	Buildings	Trees
Negligible	<i>No suitable features identified.</i>	<i>No suitable features identified.</i>
Low	<i>A structure which could be used opportunistically, however, is not likely to be used on a regular basis / by a large number of bats.</i>	<i>Tree of sufficient size / age to support bat roost features; but with none identified from the ground.</i>
Moderate	<i>A building with features which, could be used regularly by a small number of bats.</i>	<i>Tree with features which, may support a bat roost of low conservation status.</i>
High	<i>A building with features suitable for use by a large number of bats on a regular basis.</i>	<i>A tree with several potential bat roost sites that are suitable for use by a large number of bats.</i>

4.0 RESULTS

4.1 Desk Study – Background Information

Designated Sites and Habitats

- 4.1.1 The following section outlines the ecological context of the land, describing any designated nature conservation sites in the vicinity of the land. The following designated sites and habitats are not necessarily representative of the existing site's ecology, but are indicative of the ecological context of the surrounding area; a factor that may be important when assessing the presence / absence potential of certain species groups.

Statutory Protected Sites

- 4.1.2 The only statutory protected site within 2.0 km of the proposal site is the *South Downs National Park*, which is 350.0 m from the eastern boundary of the site. The site is separated from the *South Downs National Park* at this point by the A280 link road; the surroundings of the site have been long established in commercial and horticultural use and are not representative of the landscape of the National Park.

- 4.1.3 The site is located within the *Impact Risk Zones* of *Arundel Park SSSI* and *Climping Beach SSSI*. The proposed development does not appear to fall into a category which would require consultation with Natural England. The existing site is largely within residential use, with ornamental shrubs and trees in other areas. The proposed development may slightly increase indirect recreational pressures upon local designated sites.

Non-Statutory Protected Areas

- 4.1.4 Local Wildlife Sites - LWSs are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2012)* and as such are material considerations when assessing planning applications.
- 4.1.5 The following non-statutory protected site is located within 2.0 km of the proposal site:

Table No. 1: Non-Statutory Protected Sites within 2.0 km of the Proposal Site

<i>Site Name</i>	<i>Reason for Designation</i>	<i>Distance from Site</i>
<i>Highdown Park North Field.</i>	<i>Chalk Downland with a good flora, including orchids.</i>	<i>1,532.0 m E</i>

- 4.1.6 The proposals should seek to protect and enhance aspects of green infrastructure, in line with the *Arun Local Plan 2011-2031*. Within the site, the assets of relevance would include the deciduous tree groups and hedges. The proposals should therefore seek to retain boundary vegetation and reinforce this to provide vegetative corridors.

UK Priority Habitats

- 4.1.7 Within 2.0 km of the site there are *Priority Habitats* of *coastal and floodplain grazing marsh; good quality semi-improved grassland; lowland calcareous grassland; deciduous woodland; ancient and semi-natural woodland and traditional orchard*. The site itself does not contain any *Priority Habitat*; there are however large areas of *good quality semi-improved grassland* 42.0 m to the east of the site. The site contains a field, however the field appears to be more ruderal in nature, showing signs of significant nutrient enrichment, and therefore not considered as similar to this habitat. The proposals would not seek to alter or impact *Priority Habitats*.

UK Priority Species

- 4.1.8 Bats relevant to the site such as common pipistrelle bats (*Pipistrellus pipistrellus*); and brown long-eared bats (*Plecotus auritus*) have been recorded within the local area.
- 4.1.9 All species of bats and their roosts are protected under *The Conservation of Habitats and Species Regulations 2017*. It is an offence for anyone to intentionally kill or injure a bat; disturb a roosting bat; damage, destroy or obstruct access to any place used by bats for shelter; and / or to significantly alter the local distribution of bats.
- 4.1.10 There are limited records of reptiles within 2.0 km of the site. Widespread reptiles are likely to be present locally given the horticultural nature of surrounding sites. All species of UK reptile are protected against reckless or intentional killing or injuring under *The Wildlife and Countryside Act 1981 (as amended)*.
- 4.1.11 There are no records of great crested newts (*Triturus cristatus*) within the local area. eDNA survey and HSI assessment of the nearest ponds was conducted in 2016 by another consultancy for an unrelated development. The results were negative for great crested newts, suggesting their likely absence in the immediate area. Great crested newts and their resting / breeding sites are protected under *The Conservation of Habitats and Species Regulations 2017* and *The Wildlife and Countryside Act 1981 (as amended)*.

- 4.1.12 There are records of water voles (*Arvicola amphibious*) within 2.0 km of the site, including at the balancing ponds 234.0 m to the south-east of the site. The water vole is fully protected *under Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)*.
- 4.1.13 There are limited records of hazel dormouse (*Muscardinus avellanarius*) within 2.0 km of the site; the presence of hazel dormice locally is generally associated with woodland, and hedgerows along the A27 corridor; these areas are generally further north than the site. The hazel dormouse is fully protected under *Schedules 5 & 6 of The Wildlife and Countryside Act 1981 (as amended)* and *Schedule 2 of The Conservation of Habitats and Species Regulations 2017*.
- 4.1.14 Records of badgers (*Meles meles*) are not available within 2.0 km of the site, however they are likely to be present locally. Badgers are protected under *The Protection of Badgers Act 1992*.
- 4.1.15 There are many records of Hedgehogs (*Erinaceus europaeus*) within 2.0 km of the site; these are mainly associated with the village of Angmering, where people are more likely to notice and record their presence. Hedgehog numbers are declining, and they have been a *UK Biodiversity Action Plan (BAP)* species since 2007.

4.2 Field Survey

- 4.2.1 The following habitats and features were recorded within the land and the extended survey area. The general site character has been described along with a brief description of the habitat's physical characteristics. These are shown on the Site Habitat Plan in *Figure No. 01*. Species Lists for Habitat Parcels are listed in *Table No. 02*.

4.2.2 Habitats within and adjacent to the land include:

- *Buildings;*
- *Amenity Grassland;*
- *Tall Ruderal Vegetation;*
- *Ephemeral / Short Perennial Vegetation;*
- *Hard / Bare Ground;*
- *Introduced Shrubs and Scrub;*
- *Log / Debris Piles;*
- *Deciduous Treeline;*
- *Coniferous Treeline / Hedge;*
- *Intact, Species-Poor Hedge;*
- *Hedge with Trees;*
- *Scattered Trees;*
- *Immature, Deciduous Plantation Woodland.*

Site Description (Refer to Appendix A – Site Photographs)

Buildings

- 4.2.3 The buildings are a focal point of the site, and consist of the residential dwelling, garage and ancillary buildings to the dwelling. The buildings are discussed further in the *Preliminary Bat Roost Assessment*.

Amenity Grassland

- 4.2.4 Amenity grassland lawns are present within the gardens, and along the track through the site. The amenity grassland is relatively well-maintained, dominated by perennial rye-grass (*Lolium perenne*) with other common species such as self-heal (*Prunella vulgaris*) and creeping buttercup (*Ranunculus repens*) present. The grass was well-maintained, offer little ecological value (*Refer to Photograph No. 01 – Appendix A*).

Tall Ruderal Vegetation

- 4.2.5 The field comprising the eastern portion of the site is currently covered in dead stems; it is apparent that the field would be dominated in summer by common nettle (*Urtica dioica*) which are yet to regrow this season (Refer to Photograph No. 02 – Appendix A). Grasses were coarse and dominated by common species such as Yorkshire fog (*Holcus lanatus*); other forb species such as cow parsley (*Anthriscus sylvestris*) were noted, as was an abundance of mosses.

Ephemeral / Short Perennial Vegetation

- 4.2.6 Under the trees, and alongside several tracks the bare ground has been colonised by a short perennial vegetation, dominated by mosses but with a variety of common forbs such as cleavers (*Galium aparine*); chickweed (*Cerastium fontanum*) and ground ivy (*Glechoma hederacea*). In places common nettle (*Urtica dioica*) were present, and it is assumed that these areas become more overgrown in the summer (Refer to Photograph No. 03 – Appendix A)

Hard / Bare Ground

- 4.2.7 Two distinct types of hard and bare ground are present within the site; concrete, paved and tarmac hardstanding, surrounding the house and leading to other buildings; and bare ground and mud tracks. A large bare hole was present within the garden. These areas are of 'negligible' ecological value, being largely devoid of vegetation.

Introduced Shrubs and Scrub

- 4.2.8 The site contains many large planting beds with mature shrub planting. The shrubs are of diverse species, with common species including dogwood (*Cornus sanguinea*); cherry laurel (*Prunus laurocerasus*); *Aucuba* sp. and *Hebe* sp. The beds were generally dense and well-tended. Large shrubs and small trees provide screening to the site frontage.

- 4.2.9 In some areas a scrub community had developed in and around the shrubs; in some areas this appeared intentional to create a natural effect, whilst in others the scrub had simply self-seeded. Scrub species included common elder (*Sambucus nigra*); blackthorn (*Prunus spinosa*); bramble (*Rubus fruticosus*); buddleia (*Buddleia davidii*) and silver birch (*Betula pendula*) (Refer to Photographs Nos. 04-05 – Appendix A).

Log / Debris Piles

- 4.2.10 Within the site are several piles of logs, and stacks of building materials, to the edges of introduced shrubs and hedges. One log pile is a partially-burnt bonfire (Refer to Photographs Nos. 06-07 – Appendix A).

Deciduous Treelines

- 4.2.11 The north-eastern boundary of the site is lined with a line of large poplar (*Populus sp.*) trees. The trees are a dominant feature of the site. (Refer to Photograph No. 08 – Appendix A).

Coniferous Treelines / Hedge

- 4.2.12 The site contains a line of large Leyland cypress (*Cupressus x leylandii*) trees along the northern boundary. The treeline provides a strong boundary feature, but little ecological value (Refer to Photograph No. 08 – Appendix A).

Intact, Species-Poor Hedge

- 4.2.13 Within the site and along parts of the boundary are sections of hedge. The hedges are generally single-species, of cherry laurel (*Prunus laurocerasus*); shrub honeysuckle (*Lonicera nitida*) and yew (*Taxus baccata*). The vegetation is ornamental in nature; however, it provides some screening and a refuge for wildlife such as birds (Refer to Photograph No. 09 – Appendix A).

Hedge with Trees

- 4.2.14 To the southern and eastern boundaries of the site, are several hedges with large emergent trees. The hedge was formed of native species, mainly common hawthorn (*Crataegus monogyna*) with elm (*Ulmus sp.*); trees were a mixture of native species such as ash (*Fraxinus excelsior*) and introduced species such as pine (*Pinus sp.*). The hedges provide both screening and some wildlife potential (Refer to Photograph No. 10 – Appendix A).

Scattered Trees

- 4.2.15 Within the garden and planting beds, and within the field are a number of scattered trees. These included self-seeded elder (*Sambucus nigra*) and other native species such as hazel (*Corylus avellana*) as well as ornamental species such as Eucalyptus gum trees (*Eucalyptus sp.*) and cork oak (*Quercus suber*). The trees have some value nesting birds; however, the majority are ornamental (Refer to Photographs No. 11 - 12 – Appendix A).

Immature, Deciduous Plantation Woodland

- 4.2.16 To the eastern edge of the site, a belt of trees has been planted so as to create a woodland effect. The trees are still relatively immature but are beginning to fill out and create this habitat. The trees are partially native species such as hornbeam (*Carpinus betulus*) as well as introduced species such as horse chestnut (*Aesculus hippocastanum*) and sycamore (*Acer pseudoplatanus*). The woodland offers some ecological potential but is yet to mature (Refer to Photograph No. 13 – Appendix A).

Fauna

- 4.2.17 A number of mammal holes were noted throughout the site and were generally considered to be from rabbits (*Oryctolagus cuniculus*) (Refer to Photograph No. 14 – Appendix A). A number of garden birds were present on the site, including robin (*erithacus rubecula*); magpie (*Pika pika*); woodpigeon (*Columba palumbus*) and blackbird (*Turdus merula*). A dovecote is present within the field, within which a number of fantail pigeons (*Columba livia*) are currently roosting (Refer to Photograph No. 15 – Appendix A).

4.3 *Preliminary Bat Roost Assessment*

- 4.3.1 The existing buildings and trees within the site were assessed for their potential to support roosting, commuting and foraging bats.

Buildings

- 4.3.2 **Building B1** is the dwelling on-site. The dwelling is a large detached house, built of brick with a hipped, clay-tiled roof. The roof had a number of dormer windows and valleys. The walls were partially clad in timber weather-boarding and clay hanging tiles. The building appeared in a good overall state of repair, with soffits fitting well and only several gaps in tiles. (*Refer to Photograph No. 16 – Appendix A*).
- 4.3.3 Internally, the roof was of timber construction with a felt lining. No significant gaps were noted in the felt. The apex of the loft was generally heavily-cobwebbed. A scattering of bat droppings, of a texture and size indicative of pipistrelle bats were noted within the loft. (*Refer to Photograph No. 17 – Appendix A*).
- 4.3.4 Overall, there is ‘*high*’ potential for bats to be present within roof voids, and under tiles and weatherboarding of **Building B1**. The droppings indicate possible presence within the loft, and the complexity of the roof (*with numerous valleys and dormers*) would provide possible access routes. The abundance of hanging tiles and weatherboarding would also provide possible roosting crevices.
- 4.3.5 The garage (**Building B2**) was clad in timber, with weather boarding to several aspects and a tiles roof. The loft appears to have been converted into an annex. There is little potential for roosting within voids, however the possibility of bats roosting under tiles or weatherboarding cannot be ruled out. **Building B2** offers ‘*low*’ bat roost potential (*Refer to Photograph No. 18 – Appendix A*).

4.3.6 **Building B3** consists of a workshop and store. A row of windows runs along the southern aspect. The building is in a poor state of repair. The building is too light and draughty, and of inappropriate construction for bats. **Building B3** is considered to offer 'negligible' bat roost potential (*Refer to Photograph No. 19 – Appendix A*).

4.3.7 **Building B4** consists of a structure with a curved roof, covered in fabric. The fabric is failing and allows in light. The structure is used for storage and is in a poor state of repair. Pigeons are roosting within the roof. The structure offers 'negligible' bat roost potential (*Refer to Photograph No. 20 – Appendix A*).

Existing Trees

4.3.8 The existing trees were assessed for their potential to support roosting bats. No trees were identified with significant bat roosting potential; the majority of the trees on-site are ornamental and of insufficient size to offer roosting potential for bats.

4.3.9 The boundary vegetation within the site may offer some potential foraging habitat for bats, although it is relatively isolated and therefore unlikely to offer a significant commuting resource. The shrubs, scrub and tall ruderal vegetation may also offer foraging potential, although due to the lack of diversity the tall ruderal is unlikely to support a large invertebrate population suitable for bats.

5.0 EVALUATION

5.1 The site and its surroundings comprise habitats of Buildings; Amenity Grassland; Tall Ruderal Vegetation; Ephemeral / Short Perennial Vegetation; Hard / Bare Ground; Introduced Shrubs and Scrub; Log / Debris Piles; Deciduous Treeline; Coniferous Treeline / Hedge; Intact, Species-Poor Hedge; Hedge with Trees; Scattered Trees; and Immature, Deciduous Plantation Woodland. The majority of habitats proposed for modification consist of tall ruderal; amenity grassland; introduced shrubs with scrub and hard / bare ground. These habitats are of 'low' ecological value overall. The plant species on site were generally common and widespread species, and diversity was low; no rare or unusual species were recorded.

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- 5.2 The existing buildings and trees on site were assessed for their potential to support roosting bats. The dwelling on site (**Building B1**) offers 'high' bat roost potential. The garage (**Building B2**) offers 'low' bat roost potential. All other buildings (**Building B3 - Building B4**) offer 'negligible' bat roost potential. No trees on-site offer bat roosting potential. The boundary vegetation offers 'low-moderate' bat foraging and commuting potential, whilst the vegetation within the site offers 'low' foraging potential.
- 5.3 The scattered trees, treelines, hedges and introduced shrubs with scrub on site provide suitable nesting habitat for birds. A number of common bird species were noted within the site. The tall ruderal habitat might also offer limited potential for grassland birds such as skylark (*Alauda arvensis*); the habitat is dominated by nettle, and as such breeding grassland birds are considered unlikely. The dovecote is likely to be used year-round by the fantail pigeons, as is **Building B4**.
- 5.4 The tall ruderal, ephemeral / short perennial vegetation and log / debris piles offer potential habitat for amphibians and reptiles. The habitat is relatively limited in extent; treelines and scrub do provide some connectivity within the site; beyond this, reptiles would have to cross the adjacent industrial / commercial site to enter or leave the site. This vegetation is likely to be largely removed. The deciduous treelines and log / debris piles offer some hibernation potential for reptiles and amphibians.
- 5.5 The site presents an opportunity for enhancing the biodiversity within the site and potential enhancement measures are outlined in Section 7.0.

6.0 PROTECTED SPECIES – CONCLUSIONS AND RECOMMENDATIONS

Bats

- 6.1 The dwelling on site (**Building B1**) offers 'high' bat roost potential. The garage (**Building B2**) offers 'low' bat roost potential. The buildings are not proposed to be altered, and are sufficiently distant from the construction areas that disturbance is unlikely. Continuous vegetative lines from the house should be maintained to allow any bats present to continue foraging.

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- 6.2 All other buildings (**Building B3 - Building B4**) offer '*negligible*' bat roost potential. No trees on-site offer bat roosting potential. No further surveys are required with regard to roosting bats.
- 6.3 The vegetation on site was assessed as having a '*low-moderate*' potential for commuting and foraging bats. The boundary trees and hedges are generally proposed for retention; potential bat commuting corridors are unlikely to be interrupted. The vegetation loss within the site, whilst relatively large in quantity is not considered of sufficient quality or quantity to require further survey. The removal of vegetation should be compensated through the planting of replacement planting, particularly of hedges and trees along the boundaries, to continue to provide linear vegetative corridors.

Reptiles

- 6.4 The tall ruderal, ephemeral / short perennial vegetation and log / debris piles offer potential habitat for amphibians and reptiles. The habitat is relatively limited in extent; treelines and scrub do provide some connectivity within the site; beyond this, reptiles would have to cross the adjacent industrial / commercial site to enter or leave the site. This vegetation is likely to be largely removed. The deciduous treelines and log / debris piles offer some hibernation potential for reptiles and amphibians.
- 6.5 Other reptile surveys undertaken in the local by Lizard Landscape Design and Ecology area have not identified reptiles locally; however, these surveys were of less established sites. Reptiles are widespread within Southern England, and given the suitable habitat on-site, their presence cannot be conclusively ruled out. A detailed reptile survey is therefore recommended to determine whether reptiles are present within the site, their species and numbers so that an appropriate mitigation plan can be put in place if necessary.

Amphibians

- 6.6 There is suitable terrestrial habitat on-site for amphibians. eDNA survey and HSI assessment of the nearest ponds was conducted in 2016 by another consultancy for an unrelated development. The results were negative for great crested newts, suggesting their likely absence in the immediate area. No other ponds where great crested newts could breed have been identified within the vicinity. No further surveys are recommended for amphibians. Any clearance of patches of habitat suitable for amphibians shall be undertaken in a sensitive manner to minimise the risk of harm to individual amphibians, which could then disperse to other areas of the site.

Nesting Birds

- 6.7 All active birds' nests are protected against damage / destruction under *The Wildlife and Countryside Act 1981 (as amended)* therefore, it is advised that clearance of any trees / hedges / shrubs take place outside of the bird nesting season (*Season: March - August*) or after careful inspection by the *Suitably Qualified Ecologist* to ensure no active birds' nests are present.
- 6.8 The grassland field to the east of the site should either be kept mown short or inspected prior to clearance, to avoid the risk of disturbing ground nesting birds. The dovecote, any nest boxes and **Building B4** should be removed outside of the bird nesting season (*bird nesting season: March – August inclusive*); the dovecote could be relocated to within the garden, or completely removed. If birds are present year-round, advice should be taken from a local pigeon-keeping group as to the best way to carry this out, without disturbing birds nesting within the dovecote.

Badgers

- 6.9 A number of mammal holes were noted within the site; however, none of these were of a size indicative of a badger sett. The site would offer foraging potential for badgers. Badgers are protected under the *Protection of Badgers Act 1992*; should a sett be found during development, works should cease, and the ecologist be consulted to determine the appropriate course of action.

Hazel Dormice

- 6.10 The hedges to the site boundaries would offer some potential habitat for hazel dormice; the site is extremely isolated from other suitable habitats, and too limited in extent to support a self-sufficient population. No further survey with regards to hazel dormice is recommended.

Others

- 6.11 No habitat suitable for supporting other protected species (*such as water vole or otter*) was noted on site. No rare / unusual / protected flora was recorded on this site.

7.0 ECOLOGICAL ENHANCEMENTS

7.1 The design of any proposed development should consider ecological enhancements for the benefit of wildlife in line with the *National Planning Policy Framework* and *Local Planning Policy*. These enhancements should reflect the current state of the site and its surroundings, as well as the proposed use of the site. Recommendations for ecological enhancements that could be considered as part of development proposals could include:

- *The provision of nesting boxes for a variety of bird species within trees and walls within the site;*
- *The provision of roosting boxes for bats within trees or buildings on the site;*
- *The planting of additional native trees and shrubs to reinforce boundary vegetation and improve habitat for birds and invertebrates;*
- *Use of native and local shrub and tree species with ecological value within planting schemes – this might include (for example) guelder rose (*Viburnum opulus*); pedunculate oak (*Quercus robur*); field maple (*Acer campestre*); wild privet (*Ligustrum ovalifolium*); common hawthorn (*Crataegus monogyna*); rowan (*Sorbus aucuparia*); whitebeam (*Sorbus aria*); wild service tree (*Sorbus torminalis*); wild cherry (*Prunus avium*); hornbeam (*Carpinus betulus*); common box (*Buxus sempervirens*); holly (*Ilex aquifolium*); alder (*Alnus glutinosa*); silver birch (*Betula pendula*);*
- *Use of a sympathetic lighting scheme across the site, with lighting angled down and away from tree lines – in particular lighting should be angled away from boundary vegetation;*
- *Placement of bug hotels such as NHBS Bee and Bug Biome or similar to provide additional habitat for invertebrates;*
- *Replacement of existing compost and log piles and creation of new log piles to the edges of the site.*

8.0 REFERENCES

ARG UK: Advice Note 5: Great Crested Newt Habitat Suitability Index (2010);

English Nature: The Dormouse Conservation Handbook (2nd ed.) (2006);

JNCC: Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit; (2003);

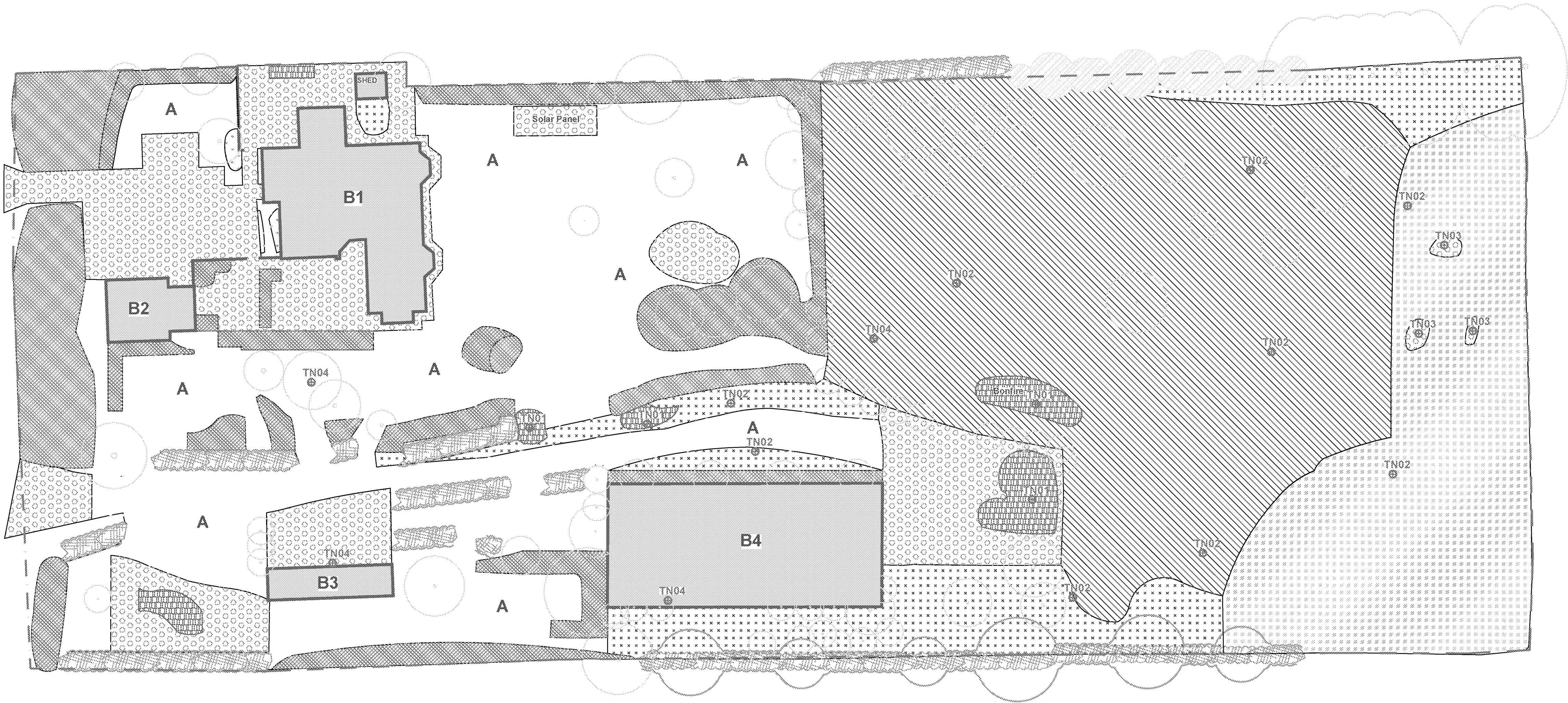
Collins J (ed): Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.) The Bat Conservation Trust (2016);

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth;

Mitchell-Jones and McLeish: Bat Workers Manual; JNCC, 3rd Edition (2004);

Streeter, D.: The Most Complete Guide to the Flowers of Britain and Ireland; Harper Collins, London (2010);

www.magic.gov.uk.



Legend

Development Site Boundary / Survey Area.

Existing Buildings and Walls.

TN01

Target Notes.

A

Amenity Grassland.

Hard / Bare Ground.

Intact Species-Poor Hedge.

Coniferous Treeline.

Scattered Trees.

Logpile.

Introduced Shrub Planting.

Immature Deciduous Plantation Woodland.

Introduced Shrubs and Scrub.

Ephemeral/Short Perennial Vegetation.

Hedge With Trees.

Tall Ruderal Vegetation.

Planning Issue

Rev	Description	Date	Initials
01	Planning Issue	10.05.18	GS
00	Planning Issue	05.04.18	LB

LIZARD

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Client

Mr A Carter

Project Title and Location

The Laurels, Dappers Lane, Angmering

Drawing Title

Figure No.1 - Site Habitat Plan

Scale

1:250@A1

Drawn

LB

Approved

JJ

Date

05.04.18

Drawing No

LLD1392-ECO-FIG-001

Revision

01

Figure No.1 - Site Habitat Plan
The Laurels, Dappers Lane, Angmering

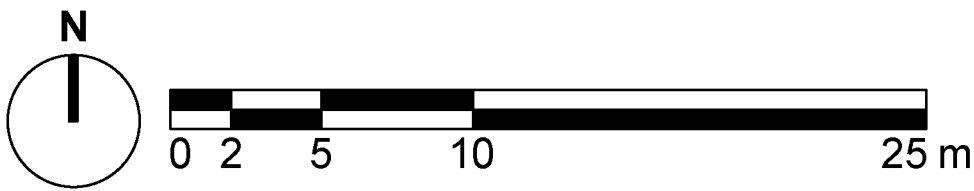


Table No. 02 – Species List for Habitat Parcels

Amenity Grassland

Common Name	Scientific Name	DAFOR
Bedstraw	<i>Galium sp.</i>	LF
Common Daisy	<i>Bellis perennis</i>	LF
Cow Parsley	<i>Anthriscus sylvestris</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	LF
Germander Speedwell	<i>Veronica chamaedrys</i>	O
Herb Robert	<i>Geranium robertianum</i>	O
Lesser Celandine	<i>Ficaria verna</i>	R
Lord and Ladies	<i>Arum maculatum</i>	O
Mosses	<i>Mosses sp.</i>	LF
Mouse-Ear Chickweed	<i>Cerastium fontanum</i>	R
Perennial Rye-Grass	<i>Lolium perenne</i>	D
Selfheal	<i>Prunella vulgaris</i>	LF
Snowdrop	<i>Galanthus sp.</i>	O
Willowherb	<i>Epilobium sp.</i>	R

Tall Ruderal

Common Name	Scientific Name	DAFOR
Cleavers	<i>Galium aparine</i>	R
Common Nettle	<i>Urtica dioica</i>	D
Cow Parsley	<i>Anthriscus sylvestris</i>	LF
Ground Ivy	<i>Glechoma hederacea</i>	LF
Lords and Ladies	<i>Arum maculatum</i>	O
Mosses	<i>Mosses sp.</i>	LA
Perennial Rye-Grass	<i>Lolium perenne</i>	R
Teasel	<i>Dipsacus fullonum</i>	O
White Dead-Nettle	<i>Lamium album</i>	R
Yorkshire Fog	<i>Holcus lanatus</i>	O

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

Ephemeral / Short Perennial Vegetation

Common Name	Scientific Name	DAFOR
Bluebell	<i>Hyacinthoides sp.</i>	F
Cleavers	<i>Galium aparine</i>	LA
Coltsfoot	<i>Tussilago farfara</i>	R
Common Daisy	<i>Bellis perennis</i>	O
Common Nettle	<i>Urtica dioica</i>	O
Cow Parsley	<i>Anthriscus sylvestris</i>	R
Green Akanet	<i>Pentaglottis sempervirens</i>	R
Ground Ivy	<i>Glechoma hederacea</i>	LA
Ivy	<i>Hedera helix</i>	LD
Lord and Ladies	<i>Arum maculatum</i>	F
Mosses	<i>Mosses sp.</i>	LD
Mouse-Ear Chickweed	<i>Cerastium fontanum</i>	LA
Perennial Rye-Grass	<i>Lolium perenne</i>	LA
Violet	<i>Viola sp.</i>	O
Wild Strawberry	<i>Fragaria vesca</i>	O
Yorkshire Fog	<i>Holcus lanatus</i>	R

Dense Scrub

Common Name	Scientific Name	DAFOR
Blackthorn	<i>Prunus spinosa</i>	O
Bramble	<i>Rubus fruticosus</i>	LD
Buddleia	<i>Buddleia davidii</i>	O
Common Elder	<i>Sambucus nigra</i>	LA
Common Nettle	<i>Urtica dioica</i>	F
Dogwood	<i>Cornus sanguinea</i>	LF
Foxglove	<i>Digitalis purpurea</i>	R
Holly	<i>Ilex aquifolium</i>	O
Honeysuckle	<i>Lonicera periclymenum</i>	LF
Ivy	<i>Hedera helix</i>	LA
Silver Birch	<i>Betula pendula</i>	O

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Scattered Trees, Treelines and Hedges

Common Name	Scientific Name	DAFOR
Apple	<i>Malus sp.</i>	R
Ash	<i>Fraxinus excelsior</i>	F
Beech	<i>Fagus sylvatica</i>	R
Cherry Laurel	<i>Prunus laurocerasus</i>	LD
Coast Redwood	<i>Sequoia sempervirens</i>	R
Common Hawthorn	<i>Crataegus monogyna</i>	LD
Common Walnut	<i>Juglans regia</i>	R
Cork Oak	<i>Quercus suber</i>	R
Cypress	<i>Cupressus sp.</i>	R
Elder	<i>Sambucus nigra</i>	LF
Elm sp.	<i>Ulmus sp.</i>	LF
Eucalyptus Gum Tree	<i>Eucalyptus sp.</i>	O
Holm Oak	<i>Quercus ilex</i>	LA
Horse Chestnut	<i>Aesculus hippocastanum</i>	O
Leyland Cypress	<i>Cupressus x leylandii</i>	LD
Monterey Cypress	<i>Cupressus macrocarpa</i>	R
Oak	<i>Quercus sp.</i>	R
Pedunculate Oak	<i>Quercus robur</i>	R
Pine	<i>Pinus sp.</i>	O
Pine	<i>Pinus radiata</i>	O
Poplar	<i>Populus sp.</i>	LA
Red Cedar	<i>Thuja sp.</i>	R
Scots Pine	<i>Pinus sylvestris</i>	LF
Shrub Honeysuckle	<i>Lonicera nitida</i>	LF
Silver Birch	<i>Betula pendula</i>	F
Spruce	<i>Picea sp.</i>	R
Sycamore	<i>Acer pseudoplatanus</i>	LA
Wellingtonia	<i>Sequoiadendron giganteum</i>	R
Willow sp.	<i>Salix sp.</i>	LA
Yew	<i>Taxus baccata</i>	LD

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Introduced Shrubs

Common Name	Scientific Name	DAFOR
Bamboo	<i>Subfamily: Bambusoideae</i>	LF
Cabbage Palm	<i>Cordyline australis</i>	O
Camelia	<i>Camelia sinensis</i>	O
Cherry Laurel	<i>Prunus laurocerasus</i>	LD
Cherry Plum	<i>Prunus cerasifera</i>	R
Chusan Palm	<i>Trachycarpus fortunei</i>	R
Cotoneaster	<i>Cotoneaster sp.</i>	F
Curly Hazel	<i>Corylus avellana 'Contorta'</i>	R
Cypress sp.	<i>Cupressus sp.</i>	F
Dogwood	<i>Cornus sanguinea</i>	LF
Eucalyptus	<i>Eucalyptus sp.</i>	LF
Forsythia	<i>Forsythia sp.</i>	O
Hebe	<i>Hebe sp.</i>	F
Hellebore	<i>Helleborus sp.</i>	O
Himalayan Birch	<i>Betula utilis var. Jacquemontii</i>	O
Holly	<i>Ilex aquifolium</i>	LF
Holm Oak	<i>Quercus ilex</i>	LA
Iris	<i>Iris sp.</i>	O
Italian Cypress	<i>Cupressus sempervirens</i>	R
Japanese Aralia	<i>Fatsia japonica</i>	R
Japanese Spindle	<i>Euonymus japonicus</i>	LF
Kohuhu	<i>Pittosporum tenuifolium</i>	F
Laurustinus	<i>Viburnum tinus</i>	R
Mexican Orange-Blossom	<i>Choisya ternata</i>	O
New Zealand Broadleaf	<i>Griselinia littoralis</i>	LF
Oregon Grape	<i>Mahonia sp.</i>	O
Ornamental Daffodil	<i>Narcissus sp.</i>	F
Periwinkle	<i>Vinca major</i>	LA
Rose	<i>Rosa sp.</i>	O
Sacred Bamboo	<i>Nandina domestica</i>	R
Shrub Honeysuckle	<i>Lonicera nitida</i>	LF
Silk Tassel Bush	<i>Garrya elliptica</i>	R
Snowdrop	<i>Galanthus sp.</i>	LF
Spotted Laurel	<i>Aucuba japonica</i>	LF
Spurge	<i>Euphorbia sp.</i>	LF
Violet	<i>Viola sp.</i>	O
Yew	<i>Taxus baccata</i>	LD

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Table No. 03 – Target Notes for Protected Species

No.	Feature	Description
TN01	Log and Debris Piles.	Piles of logs and debris which provide some habitat for reptiles, amphibians and invertebrates.
TN02	Tall Ruderal, Ephemeral / Short Perennial and Scrub Vegetation.	Vegetation which provides some habitat for reptiles and amphibians.
TN03	Mammal Holes.	Evidence of mammals, determined to be rabbits.
TN04	Birds' Nests.	A dovecote containing fantail pigeons; bird nestboxes; and evidence of birds nesting in Building B4 .

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APPENDIX A – SITE PHOTOGRAPHS

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ARUN DISTRICT COUNCIL A/74/18/OUT

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 3 - Ephemeral and short perennial vegetation beneath trees.



Photograph No. 4 - Dense introduced shrubs within the garden.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 5 - Introduced shrubs and scrub patches to the edges of a track.



Photograph No. 6 - Large debris pile, providing invertebrate habitat, and some potential for reptiles and amphibians.

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 7 - Large log pile, providing invertebrate habitat, and some potential for reptiles and amphibians.



Photograph No. 8 - Coniferous and deciduous treelines to the northern boundary.

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A black and white photograph showing a small boat, possibly a rowing boat, resting on a trailer. The boat is positioned in the lower center of the frame. The background is filled with numerous bare trees, suggesting a winter or late autumn setting. The overall scene is somewhat dark and grainy, typical of older film photography.

[illegible]

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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 1 □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □



Photograph No. 12 - Scattered trees within the garden.

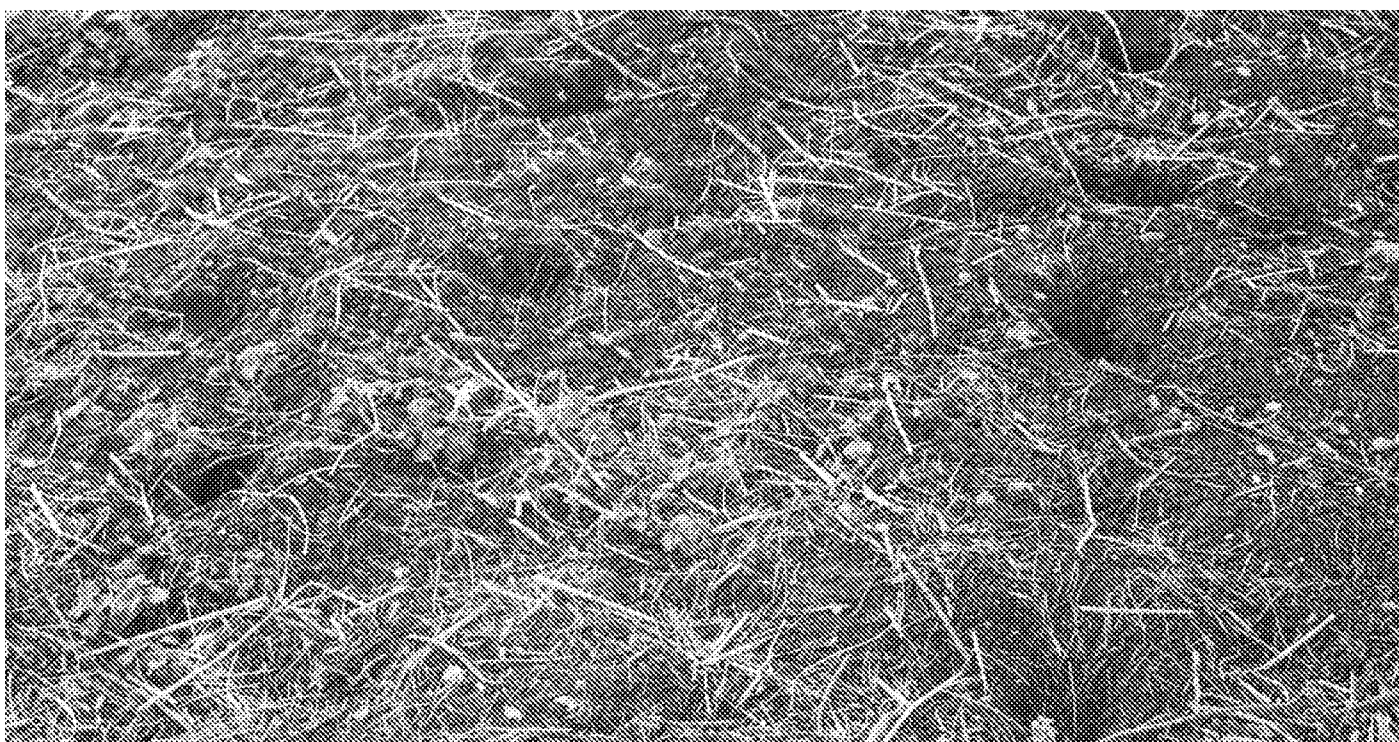
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APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 13 - Immature deciduous plantation woodland.



Photograph No. 14 - Rabbit holes present within immature deciduous plantation woodland.

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A black and white photograph of a small, white, ornate birdhouse. The birdhouse has a steep, pointed roof with decorative finials at the peak and eaves. It features several small, dark openings for birds. The birdhouse is mounted on a wooden post. The background consists of bare trees and a dense forest, suggesting a winter or late autumn setting.

[illegible]

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APPENDIX A - SITE PHOTOGRAPHS



□ *high'* bat roost potential.



□ *low'* bat roost potential.

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APPENDIX A - SITE PHOTOGRAPHS



□ *negligible*' bat roost potential.



□ *negligible*' bat roost potential but may contain birds' nests.

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