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Protected Species Walkover survey and Preliminary Ecological Appraisal

**48 Hart Plain Avenue,
Waterlooville**

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18th September 2014

Report Summary:

- 1. A survey was undertaken on 15/09/14 by Sam Lunn to assess the ecological value of 48 Hart Plain Avenue property and gardens, where it is intended to demolish the existing garage and the northern half of the garden and construct two new properties.**
- 2. The site is comprised of manicured amenity grass, an orchard, a small pond and a disused vegetable patch.**
- 3. The disused vegetable patch has potential to support reptiles and it is advised that a presence / absence survey be undertaken to ascertain what, if any, reptile species are present.**

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1 INTRODUCTION

1.1 Purpose of the Report

This report gives details of a preliminary ecological appraisal for the potential of protected species to be present at the Hart Plain Avenue property and grounds in Waterloooville. The grid reference for the site is SU 686108.

This survey assessment was carried out by Sam Lunn, an associate member of the Chartered Institute for Ecology and Environmental Management (CIEEM).

This survey and report was carried out and produced at the request of Landmark Estates.

1.2 Background

This report is intended to assess the current ecological value of the Waterloooville Property and its grounds, situated on the north side of Hart Plain Avenue. The property is surrounded on the west, north and east sides by similar houses and gardens. To the south lies Cowplain Community School across the road. The proposed development is to demolish the garage on the western side of the existing property to create access that will lead to two new bungalows in the northern half of the garden.

This report describes the results of a preliminary ecological appraisal for the potential presence or likely absence of protected species or habitats. Where necessary this report outlines mitigation measures considered necessary to protect wildlife as well as compensate for any harm that may have already taken place during the clearing of the site. A map has been provided to show all of the habitats within the site proposed for development that could be potentially affected through the development process.

2.1 Preliminary Ecological Appraisal

A preliminary ecological appraisal was carried out on 15/09/14 to evaluate the site for habitats potentially suitable to support EU and UK protected species. The populations of the following species or taxonomic groups are often recorded within rural settings similar to that of the site in Waterloooville; bats, nesting birds, great crested newt, (*Triturus cristatus*), and the more widespread species of reptiles such as common lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*) and grass snake (*Natrix natrix*).

Methods detailed by the following authors were used in the assessment of either suitable habitat to support the above species or taxonomic groups or in some cases direct evidence that the species were present¹²³⁴⁵⁷

¹ Bright, B., Morris, P., Mitchell-Jones, A.J. and Mitchell-Jones, T (1997) *The Dormouse Conservation Handbook*. English Nature.

² English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

³ Harris, S, Cresswell, P. and Jefferies, D. (1989) *Surveying Badgers*. Mammal Society.

Hundt, L (2012) *Bat Surveys: Good Practice Guidelines, 2nd edition*. Bat Conservation Trust.

2.1 Scope of the survey

A protected species walkover assessment was carried out on 15/09/14 to evaluate the site for its potential to support protected species. Taking into consideration the geographical region and habitat type, species that could be encountered are:

- Bats;
- Nesting birds;
- Great crested newt and;
- Reptiles.

In addition, observations of any important plant communities or other valuable ecological features will have been recorded and detailed. Details of initial survey method for each species are given below.

2.1.1 Bats

Trees, buildings, and other structures were assessed for the potential to support roosting bats. Bats can use a variety of roost areas including trees with holes, splits, cracks, cavities, Ivy and loose bark as well as a variety of roosting areas within buildings.

A detailed survey was carried out looking for any evidence indicating the presence of bats using buildings or trees, such as rub marks, staining or droppings outside any potential roost sites.

If any definite signs of bats or other evidence had been found (such as actual sightings, droppings, urine stains, odour, scratch marks, grease stains and feeding remains), they would have been recorded.

2.1.2 Breeding Bird Habitat

Habitats were assessed for their suitability for nesting birds. This could include ground nesting species, such as skylark (*Alauda arvensis*) and lapwing (*Vanellus vanellus*) or birds that favour urban environments. Where buildings were present, possible use by starlings (*Sturnus vulgaris*) house sparrow (*Passer domesticus*), or barn owls (*Tyto alba*).

⁴ Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-155.

⁵ Hundt, L (2012) *Bat Surveys: Good Practice Guidelines, 2nd edition*. Bat Conservation Trust.

2.1.3 *Great Crested Newt*

Initial surveys centre on identifying suitable habitat. If there are ponds or wet ditches that are considered to be suitable breeding habitats for Great Crested Newt (*Triturus cristatus*) within 500 m that are not isolated from the site by unsuitable habitat or physical barriers, then this species could be using terrestrial habitat on the site.

2.1.4 *Reptiles*

The site was assessed for reptiles, with particular attention paid to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (rough grassland and scrub).

2.2 *Legal Protection*

Legal protection applying to relevant bird, mammal and herpetofauna species is briefly detailed in *Appendix 2* of this report.

2.2 *Phase 1 Habitat Survey*

A phase 1 habitat survey presents a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain, including urban areas. The aim of Phase 1 survey is to provide, relatively rapidly, a record of the semi-natural vegetation and wildlife habitat over large areas of countryside. The habitat classification is based principally on vegetation, augmented by reference to topographic and substrate features, particularly where vegetation is not the dominant component of the habitat⁶.

Data is gathered through walking over a site and physically describing the dominating habitats present and often the floral species compositions of these habitats in the form of target notes. In addition to this, notable habitats, such as local and national Biodiversity Action Plan habitats are described.

Whilst the creation of a Phase 1 habitat map has not been deemed necessary in this instance, the habitats on the site have been described using the same assessment methodology and illustrated with supporting photographs.

⁶ JNCC (2010) *Handbook for Phase 1 habitat survey: A technique for environmental audit*. Joint Nature Conservation Committee, Peterborough.

⁷ CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*

3 RESULTS

3.1 Site Context

The proposed construction zone encompasses a garage, a small pond, a vegetable patch and the northern half of the garden (See Figure 1 below). The property is surrounded by other residential properties and gardens. The west and east boundaries are bordered by a wooden fence and the north boundary is a mixture of wooden panels and wire fencing. The southern boundary is the Hart Plain Avenue main road with a community school on the other side. The site is predominantly amenity grass cut tight but has a small disused vegetable patch, 6 apple / pear trees and a small pond. Trees around the borders include ash (*Fraxinus excelsior*), cherry laurel (*Prunus laurocerasus*), wayfaring tree (*Viburnum lantana*), hawthorn (*Crataegus monogyna*), elm (*Ulmus glabra*) and box (*Buxus sempervirens*).



Figure 1. An aerial screen grab view from Google Earth of the site, showing the location of the proposed development plot (red line boundary). The yellow rectangle denotes the shed in fig 3; the purple triangle denotes the vegetable patch in fig 5; the blue circle denotes the pond in fig 4 and the green rectangle denotes the garage in fig 2.

3.2 Preliminary Ecological Appraisal

3.2.1 Bats

The garage marked for demolition has interlocking concrete tiles, which are pugged at the

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sides offering very few gaps (see fig. 2). The gaps that are present are very small suggesting there is no possible access for roosting bats.

The small wooden shed in the north east corner has slate tiles that are tightly connected. On the top ridge of the roof there is bitumen felt which has raised up in places creating holes that would have very limited potential to support crevice dwelling bat species, such as the common pipistrelle (*Pipistrellus pipistrellus*) (see fig. 3). This shed is not more than 2.2 metres in height and lacks overall suitability for roosting bats based upon its size and the thermal conducting nature of the building materials present (bitumen heating rapidly in sunlight to very high temperatures).

There were no features seen on any of the trees along the west, east and north borders capable of supporting bats.

3.2.2 *Breeding Birds*

The trees and shrubs along the west, east and north borders have the potential to support a variety of nesting birds between 1st March and 31st August. The site is not considered suitable to support any ground nesting species.

3.2.3 *Great Crested Newts*

A single small pond is situated within the back garden of the property, which contains fish and has no terrestrial vegetation surrounding it (see fig. 4).

A Habitat Suitability Index Assessment (HSI) was conducted to estimate its potential to support Great Crested Newts:

Pond 1

Location

The pond is situated in southeast England, which is a geographic region considered to be an optimal area.

Score = 1

Pond Area

The pond has been measured as being 3m by 4m = 12 square metres.

Score = 0.05

Permanence

The pond does not dry out.

Score = 0.9 never dries

Water Quality

There is moderate invertebrate diversity.

Score = 0.67

Shade

The pond is entirely in the open with no trees or vegetation providing shade.

Score = 1

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Fowl

Absent – Waterfowl are not present.

Score = 1

Fish

Minor – Several goldfish seen within this small pond.

Score = 0.01

Pond Count

No ponds within any significant boundaries were identified on background mapping (www.magic.gov.uk and Google maps) and this score was divided by Pi (3.14) to calculate the density of ponds per km squared. This value was compared against an appropriate suitability index graph.

Score = 0.1

Terrestrial

Poor - The pond is surrounded by concrete slabs and amenity grass providing poor terrestrial cover for any great crested newts.

Score = 0.33

Macrophyte cover

40% macrophyte cover although not diverse.

Score = 0.7

HSI Calculations

$$\text{Pond 1} = (1 \times 0.05 \times 0.9 \times 0.67 \times 1 \times 1 \times 0.01 \times 0.1 \times 0.33 \times 0.7)^{1/10} = 0.305$$

Conclusions

This score is rated against the categorisation developed by Lee Brady below and this pond has scored as **poor** on this rating. The most notable factors which appear to be hampering the suitability of this pond are the its size and the presence of fish.

<u>HSI</u>	<u>Pond suitability</u>
<0.5	= poor
0.5 – 0.59	= below average
0.6 – 0.69	= average
0.7 – 0.79	= good
> 0.8	= excellent

No other ponds were identified either during the survey assessment or on background mapping or aerial imagery within 500 metres of the site.

3.2.4 Reptiles

The majority of the garden associated with the property is kept tightly mown, making the area largely unsuitable for foraging reptiles. There is however a small disused vegetable patch (see fig. 5) composed of, tussocky coarse grass, willowherb (*Epilobium spp*), woundwort (*Stachys sylvatica*), lesser celandine (*Ranunculus ficaria*), ragwort (*Jacobaea vulgaris*), hedge bind weed (*Calystegia sepium*) and brambles (*Rubus fruticosus*). The patch has been allowed to grow unmanaged over the past year and could provide a suitable habitat for foraging reptiles.

3.2.5 Habitat

The site is comprised of tightly mown amenity grass, with a number of apple and pear trees in the middle and a variety of tree species around the border. The lawns were generally species poor, with some common grassland weeds including selfheal (*Prunella vulgaris*), creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), daisy (*Bellis perennis*) and lesser celandine. Trees around the border of the site include ash (*Fraxinus excelsior*), cherry laurel (*Prunus laurocerasus*), wayfaring (*Viburnum lantana*), hawthorn (*Crataegus monogyna*), elm (*Ulmus glabra*) and box (*Buxus sempervirens*) and a small number of ornamental trees and shrubs. An area that was previously a vegetable patch that was left unattended for a year now contains willowherb, woundwort, lesser celandine, ragwort and hedge bind weed.



Figure 2 –The roof of the garage with interlocking concrete tiles.



Figure 3 – Wooden shed with bitumen sheet on top ridge.



Figure 4 – Small pond that contains fish.



Figure 5 – Disused vegetable patch on left of the picture and the 6 apple and pear trees on the right that will be lost.

3.2.6 Constraints/Limitations

An initial site assessment such as this is only able to act like a ‘snapshot’ to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey, but may be evident at other times of the year. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.

4 DISCUSSION AND RECOMMENDATIONS

4.1 Preliminary Ecological Appraisal

Habitat that is suitable for nesting birds will be lost as a result of development. Further surveys are required to establish the potential for this development to impact upon great crested newts, reptiles and roosting bats.

4.1.1 Bats

The garage was subjected to an external assessment for roosting bats and the tight-fitting interlocking tiles, which were pugged in at each gable end offered no evident roosting opportunities for bats. Similarly, the eaves around the garage offered no access into the building or underneath the tiles.

The small garden shed is not a suitable structure for roosting bats, given its small size and limited suitability of only some small gaps under bitumen felt, which would significantly heat up in sunlight.

No further surveys or mitigation is advised for roosting bats in this instance due to the extremely low potential for either of these structures to support roosting bats at any time. As part of good development practice, it is recommended that the new development incorporates advice from the Bat Conservation Trust with respect to external lighting, which is attached to this report in Appendix 1.

4.1.2 Nesting birds

The site has potential nesting habitat in the trees and scrub along the north, west and east borders, where the new development is proposed and it must be assumed that birds nests could be present from the 1st March to the 31st August. No vegetation should be cut back or cleared during this time unless a hand search is first conducted by a suitably qualified ecologist.

4.1.3 Reptiles

There is a grassland habitat present on the site in the form of the disused vegetable patch that could be suitable for foraging reptiles. A presence / absence survey between April and mid October is recommended in order to establish if any reptiles are present foraging across the site. To comply with best practice guidance, artificial refugia should be placed across suitable habitat and up to seven survey visits should be made during suitable weather conditions when the ambient air temperature is between 9 and 18 degrees Celsius.

4.1.4 Great Crested Newts

The Habitat Suitability Index assessment has determined that the pond has poor potential to support great crested newts. This is largely due to the presence of fish and the small size of the pond. The location of the site in the middle of a residential area makes the dispersal and persistence of this species less likely than for more rural locations. No other ponds were

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identified within 500 metres of the proposed development.

No further surveys or mitigation is advised in this instance

4.1.5 Habitat

The construction zone is upon typical garden habitats that are not of notable ecological value, although the loss of the orchard does mean less food for some common birds and invertebrates. This could be mitigated by planting new orchard trees within the grounds of the future development.



Statement on the impact and design of artificial light on bats:

Artificial night lighting is disturbing to many bat species, including some of our rarest and most vulnerable bat species. Some fast-flying bats, such as common and soprano pipistrelle bats, are more tolerant of light and feed on the insect congregations around street lamps. However, this exposes the bats to predation. For the bats that are repelled by light such as horseshoe bats and brown long-eared bats, insect food becomes scarcer and more difficult to find and hunt.

We know that some bat species will not cross lines of light, such as street lighting. The light acts as a barrier, disrupting flight paths and fragmenting and restricting habitats. In addition, lighting close to roost access points disturb bats within a roost, delay emergence time and may result in the abandonment of a roost.

Smarter lighting, rather than less lighting, is key to mitigating the effects of light pollution. Light should only be erected where it is needed, illuminated during the time period it will be used, and at the levels that enhance visibility.

Mitigation must be guided by an understanding of the particular species that might be affected. For example, some bat species may be more sensitive than others.

Design recommendations for wildlife-friendly lighting include:

1. Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. Use only the minimum amount of light needed for safety. There are published standards for most lighting tasks, adherence to which will help minimise upward reflected light.
2. Eliminate any bare bulbs and any light pointing upwards. The spread of light should be kept near to or below the horizontal.
3. Use narrow spectrum bulbs to lower the range of species affected by lighting.
4. Use light sources that emit minimal ultra-violet light. Insects are attracted to light sources that emit ultra-violet radiation.
5. Reduce light-spill so that light reaches only areas needing illumination. Shielding or cutting light can be achieved through the design of the luminaire or with accessories, such as hoods, cowls, louvers and shields to direct the light.
6. Reduce the height of lighting columns. Light at a low level reduces ecological impact. However, higher mounting heights allow lower main beam angles, which can assist in reducing glare.
7. For pedestrian lighting, use low level lighting that is directional as possible and below 3 lux at ground level.
8. Use embedded road lights to illuminate the roadway and light only high-risk stretches of roads, such as crossings and merges, allowing headlights to take up the slack at other times.
9. Limit the times that lights are on to provide some dark periods for wildlife.
10. Use lighting design computer programs and professional lighting designers to predict where light spill will occur.

APPENDIX 2

General

This section briefly describes the legal protection afforded to protected species. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation, but summarises the salient points.

Badger

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

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

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

Bats, Dormouse and Great Crested Newt

Dormouse (*Muscardinus avellanarius*), Great Crested Newt (*Triturus cristatus*), and all species of British bat (*Vespertilionidae* and *Rhinolophidae*) are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. These species are also all listed as European Protected Species on *Schedule 2* of the *Conservation (Natural Habitats, etc.) Regulations 1994* which gives them full protection under *Regulation 39*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRoW Act). Under the above legislation it is an offence to:

- kill, injure or take an individual;
- possess any part of an individual either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by these species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- sell or attempt to sell any individual.

It is also an offence to set and use articles capable of catching, injuring or killing bats (for example a trap or poison), or knowingly cause or permit such an action. In the case of Dormouse and all species of British bat there is also protection under *Schedule 6* of *The Wildlife and Countryside Act 1981* (as amended) relating specifically to trapping and direct pursuit of these species.

Dormouse, Great Crested Newt and all species of British bat are included as priority species in the *UK Biodiversity Action Plan* and as species of principal importance for the

conservation of biological diversity in England under *Section 74* of the *Countryside and Rights of Way (CRoW) Act 2000*.

Reptiles

Common Lizard (*Lacerta vivipara*), Grass Snake (*Natrix natrix*), Slow-worm (*Anguis fragilis*), and Adder (*Vipera berus*) are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the *Countryside and Rights of Way (CRoW) Act 2000*. Under the legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of these species; or
- sell or attempt to sell any part of these species either alive or dead.

Nesting Birds

All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). Protection was extended by the *Countryside and Rights of Way (CRoW) Act 2000*. Under the above legislation it is an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Certain species are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4)* and *1(5)*. The protection was extended by the *Countryside and Rights of Way (CRoW) Act 2000*. There are special penalties where the offences listed above are committed for any *Schedule 1* species and it is also an offence to intentionally or recklessly:

- disturb any such bird when it is building its nest or while it is in or near a nest containing dependant young; or
- disturb the dependant young of any such bird.