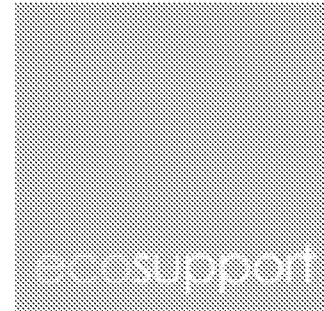


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Land North of Nyton Road
Westergate
Updated Phase I Habitat Survey

August 2017

Report Prepared by Adam Jessop BSc (Hons) MSc

For Taylor Wimpey (Southern Counties)

www.ecosupport.co.uk

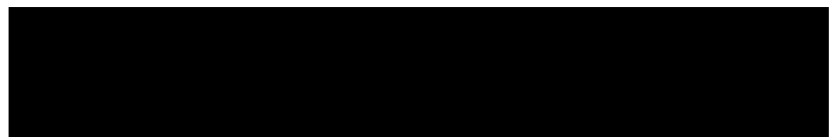


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1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by Taylor Wimpey (Southern Counties) to conduct an updated Extended Phase I Habitat Survey of the Land North of Nyton Road, Westergate site. The site has previously been issued outline consent at appeal under the appeal reference APP/C3810/A/14/2217385 (and the original planning reference number AL/61/13/). The purpose of this survey was to provide an updated ecological assessment and outline any required actions to mitigate against potential ecological impacts. The objectives of the survey were as follows:

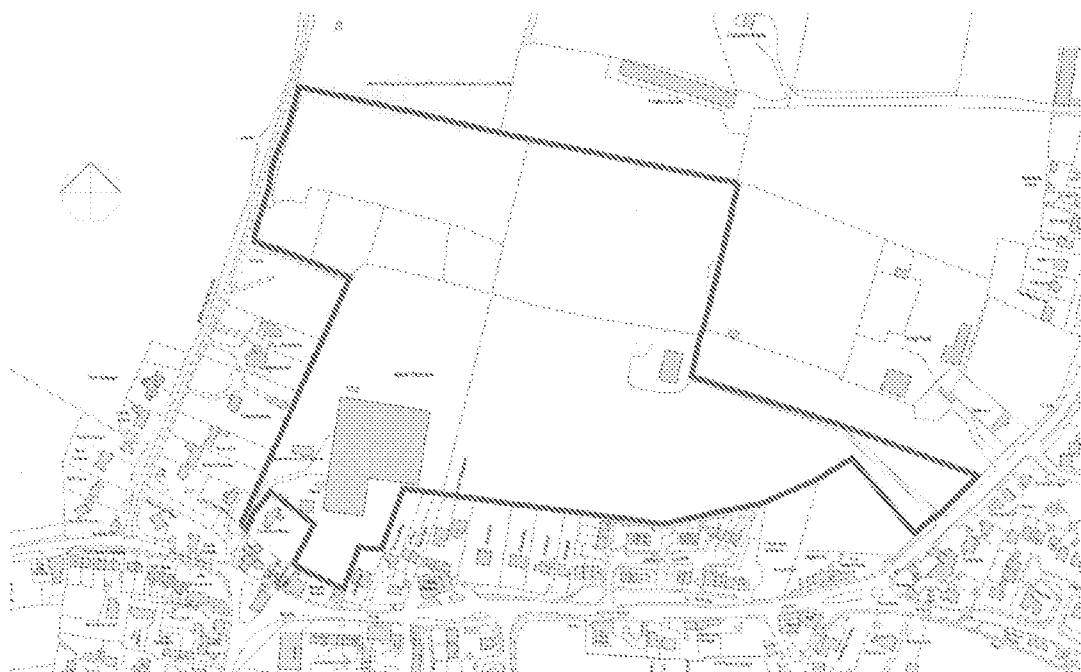
- Assess the ecological value of the site
- Identify any signs of protected species and potential features that may support them
- Make recommendations for further survey work as appropriate.

NB If the development does not take place within 24 months of this report then the findings of this survey will no longer be considered valid and should be repeated.

1.2 Site Description & Location

The site comprises a series of fields (some of which were previously used for pasture though now all managed improved) tree lines, greenhouses a work unit and a residential bungalow located north of Nyton Road, PO20 3UH (centred on OS grid reference SU 941 058) on the outskirts of Westergate (**Fig 1**). The south of the site is bounded by residential houses (with Nyton Road just beyond these), the east by a scrapyard and Fontwell Avenue, the north by arable / pasture fields and the east by residential houses and Northfields Lane.

Figure 1. Redline boundary of the development site.



1.3 Proposed Development

The Proposals entail a reserved matters application for the demolition of the existing glasshouses, residential bungalow, stables and various outbuildings for a residential development of up to 268 dwellings with associated access, public open space and landscaping. .

2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 *The Conservation of Habitats and Species Regulations (2010)*

This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

2.1.2 *The Wildlife and Countryside Act (1981) (as amended)*

This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

2.1.3 *The Countryside and Rights of Way Act (2000)*

This Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.4 *NERC Act*

The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies have due regard to the conservation of biodiversity. This means that planning authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the *UK Post – 2010 Biodiversity Framework*.

2.1.5 *Protection of Badgers Act*

The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a set and
- Disturbing a Badger while it is occupying a sett

Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

2.2 Policy

2.2.1 National

The National Planning Policy Framework (NPPF) sets out the Government's vision for biodiversity in England. It states that the planning system should maintain, enhance, restore or add to biodiversity and geological conservation interests. Key principles of the framework include:

- The protection of veteran trees
- The creation, protection, enhancement and management of networks of biodiversity and green infrastructure
- The preservation, restoration and recreation of priority habitats and ecological networks
- The recovery of priority species populations, including sections on legally protected species.

2.2.2 Local

Local planning policy pertaining to biodiversity is outlined within the *Arun Local Plan 2011 – 2031 Publication Version* (2014). Within this document Policy ENV DM5 (Development and Biodiversity) states:

'Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces, which serve to reconnect isolated sites and facilitate species movement.

Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person.

All developments shall have regard to Natural England's standing advice for protected species.

Developments shall also be consistent with all other Local Plan policies.'

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Data Request

An updated data request was submitted to Sussex Biodiversity Information Centre (SBIC) to ascertain any records held of nature conservation designations and protected species within 2 km of the boundary of the site.

The data search covered:

- Statutory designated sites
- Non-statutory designations such as SINC
- Records of protected and notable species.

3.1.2 Waterbodies

Any ponds located within 500 m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

3.2 Field Survey

3.2.1 Habitats

The updated Phase I habitat survey was undertaken by Adam Jessop of Ecosupport during July 2017. Identification of suitable habitats and features to support protected species was undertaken during the initial Phase I walk over survey. This was carried out through a visual assessment of the site following the methodology outlined within the Joint Nature Conservation Committees (JNCC) *Phase I Habitat Survey Handbook* (2010).

3.2.2 Badger

The site was thoroughly searched for evidence of use by Badgers (*Meles meles*), with the specific aim of identifying the presence and location of any setts. In accordance with the *Badgers and Development: A Guide to Best Practice and Licensing* (Natural England, 2011) guidance, the survey accounted for a 30m from the sites boundary (observed where possible i.e. does not conflict with private dwellings). Evidence of Badgers could include latrines, dung pits, feeding remains and foraging evidence, trails and setts.

3.2.3 Bats

The buildings and trees located within the development site were assessed for any potential to support roosting and resting bats by searching for Potential Roost Features (PRFs) (which may include loose or slipped roof tiles, tile hanging, gaps into soffits, fissures / cracks in branches, Ivy with a stem diameter of > 50mm). The methods outlined within *Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition* (Collins (ed) 2016) were followed and the assessment was conducted by Adam Jessop of Ecosupport (NE class level 2 bat licence number 2015-13366-CLS-CLS).

3.3 Assessment Methodology

3.3.1 Introduction

The methodology for the assessment of the likely ecological effects of the proposed development is based on IEEM's *Guidelines for Ecological Assessment in the UK* (IEEM 2006).

3.3.2 Valuation

Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

3.4 Limitations

The first minor limitation on the results of the update Phase I survey would be the presence of leaves on the trees potentially obscuring any PRFs. This was only considered to be a minor limitation as the trees were either species typically devoid of features (i.e. *Populus* spp) or smaller size specimens, which are easier to observe. Secondly, the area to the south of the green houses is overgrown with dense scrub rendering the area largely inaccessible. This may have prevented evidence of Badgers from being seen though no obvious trails were noted leading out of the area.

4.0 ECOLOGICAL BASELINE

4.1 Existing Information

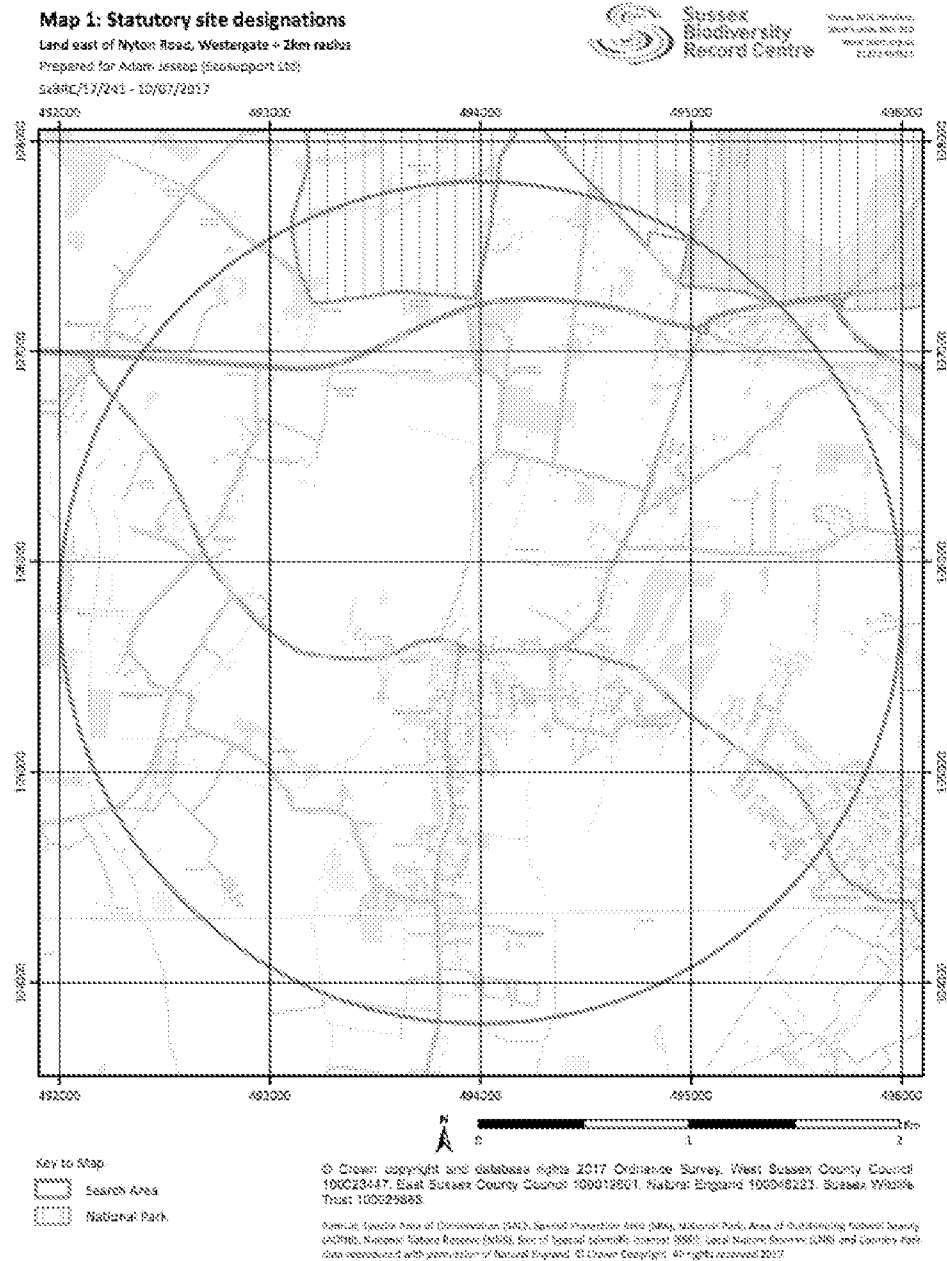
As part of the work undertaken by WYG in support of the previous application (between 2013 and 2014) the following surveys and associated findings were completed:

- Reptiles – a presence / absence survey was undertaken by PJC Ecology in 2012 which indicated the likely absence of reptiles from the site.
- Bats – Low number of droppings noted in the loft space identified by PJC Ecology in 2012 with no emergence noted based on surveys undertaken by Ramboll in 2014
- Badgers – No setts noted on site.
- Invasive species – a small stand of Japanese Knotweed (*Fallopia japonica*) was noted in the south west corner of the garden of the bungalow.

4.2 Protected Sites

4.2.1 Statutory

Fig 2 below displays the map provided by SBIC with the statutory designated sites located within 2 km of the site. The only statutory designated site identified within 2 km was the South Downs National Park.

Figure 2. Statutory designates sites located within 2km as provided by SBIC.

4.2.2 Non – Statutory

The non-statutory designations are shown in **Fig 3** where a 2 Local Wildlife Sites are listed along with a Notable Road Verge (described in greater detail in **Table 1** below).

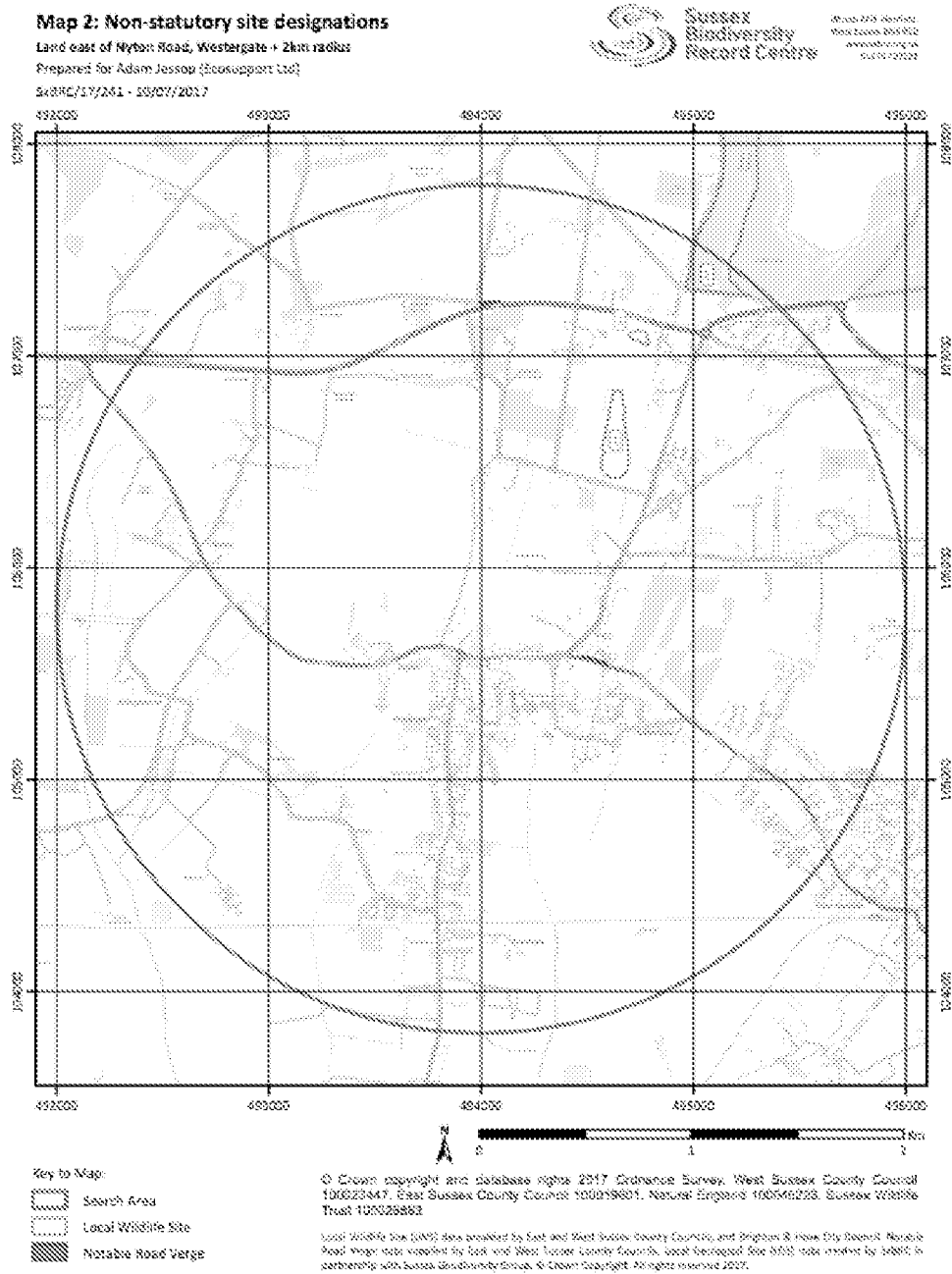
Figure 3. Non-statutory designated sites located within 2 km as provided by SBIC.

Table 1. Summary of SINC designations within 2 km of the site.

Map Label / Code	LWS Name	Distance / Direction	Reason for Designation
1 (Ar01)	Fontwell Park Racecourse	0.6 km N	Parts of the grassland around the sides and inside the racetrack of Fontwell Park are managed as hay meadow and have very species-rich swards. The flora includes some notable species, such as Adder's-tongue <i>Ophioglossum vulgatum</i> and a large population of Green-winged Orchid <i>Orchis morio</i> .
2 (AR09)	Slindon Bottom	1.8 km N	This ancient woodland lies at the junction of two geological types, namely Valley Gravel and Upper Chalk. It consequently has a varied flora. Most of it is semi-natural, though some areas have been replanted with conifers. The storm of October 1987 caused severe windblow and as a result large areas have been replanted. The western end, known as Slindon Bottom, is the most interesting part of the Slindon Woods complex and also received less storm damage.
NRV (purple)	A27 Brittens Lane, Barnham	1.5 km N	N/A
NRV (purple)	Road at Eastergate	0.2 km SE	N/A

4.3 Vegetation Survey Results

The vegetation within the site has been described below using the broad Phase I habitat classification terminology as described with JNCC (2010). The below species noted should not be considered an exhaustive list and instead refer to dominant, characteristic and other noteworthy species associated with each community within the survey area. The habitat types on site comprise:

- Improved grassland
- Tall ruderal
- Scrub
- Scattered trees / tree lines
- Hedgerow
- Hard standing
- Buildings

4.3.1 Improved grassland

The majority of the habitat on site comprises of improved grassland which is well managed with a short sward height and low botanical diversity (**Figs 4 and 5**). This habitat type was dominated by grasses including Yorkshire Fog (*Holcus lanatus*), *Agrostis* spp, Sweet Vernal Grass (*Anthoxanthum odoratum*) and Perennial Rye Grass (*Lolium perenne*). Herbaceous species were dominated by White Clover (*Trifolium repens*), with occasional *Rumex* spp, Creeping Thistle (*Cirsium arvense*), Nettle (*Urtica dioica*), Meadow Buttercup (*Ranunculus repens*), Mouse Ear Chickweed (*Cerastium vulgatum*), Field Bindweed (*Convolvulus arvensis*), Common Hogweed (*Heracleum spondylium*). Rarer species in the sward included Timothy grass (*Phleum pratense*), Yarrow (*Achillea millefolium*), Meadow Vetchling (*Lathyrus pratensis*), Lesser Stitchwort (*Stellaria graminea*) and Red Clover (*Trifolium pratense*).

Figure 4. View across the south eastern improved grassland field with tree line along boundary.



Figure 5. Improved grassland in north west corner with line of *Populus* spp trees.



4.3.2 Tall ruderal

The boundaries of the fields are more unmanaged in places allowing tall ruderal species to grow along with areas of more unmanaged grassland. This was largely dominated by Nettle with Dock (*Rumex* spp), Hedge Bindweed (*Calystegia sepium*) and False Oat Grass (*Arrhenatherum elatius*).

4.3.3 Scrub (scattered and continuous)

Areas of scattered scrub present on site often associated with the boundary hedgerows / tree lines on site with these largely dominated by Bramble (*Rubus fruticosus* agg) and Ivy (*Hedera helix*). A much larger area of continuous scrub is located top the south (and around the north and east) of the greenhouses with this also dominated by Bramble though also supports Sycamore (*Acer pseudoplatanus*) and Ash (*Fraxinus excelsior*) saplings along with Elder (*Sambucus nigra*) and Ivy.

4.3.4 Scattered trees / tree lines

Two tree lines are present on site to the east of the greenhouse and running along part of the north western boundary leading from Northfields Lane. The tree line to the east of the greenhouse supported Oak (*Quercus* spp) and Ash with the north western tree line comprises solely of *Populus* spp. Further scattered trees around the site included mature Oak, Hawthorn (*Crataegus monogyna*), Ash and ornamental species associated with the bungalow garden (including Eucalyptus).

4.3.5 Hedgerow

Continuous hedgerow habitat is somewhat limited on site with a small stretch of Laurel hedge running along the western boundary of the bungalow with a defunct hedge leading from this to join the hedge along Northfields Lane. Species within this and the hedge along Northfields lane included Hazel (*Corylus avellana*), Ash, Elder, Field Maple (*Acer campestre*), Hawthorn and Blackthorn (*Prunus spinosa*).

4.3.6 Hard standing

Areas of concrete and gravel hard standing are located around the bungalow (forming the driveway / working area adjacent to the greenhouse) and the access track / around the workshop along the eastern boundary.

4.3.7 Buildings

A number of buildings are present on site including a residential bungalow, greenhouses, a dilapidated shed and a corrugated metal / asbestos workshop. These have been discussed in greater detail with respect to bats in the below section (4.4).

4.4 Bat Survey Results

4.4.1 Pre existing data

The SBIC data request returned records for *Pipistrellus* spp (5 records), Common Pipistrelle (*Pipistrellus pipistrellus*), *Plecotus* spp (2 records) and Brown Long Eared (*Plecotus auritus*) (5 record), Serotine (*Eptesicus serotinus*) (3 records) and Western Barbastelle (*Barbastella barbastellus*) (16 records, the majority of which are within Slindon Woods and the surrounding area).

4.4.2 Trees

During the Phase I survey, all trees were assessed for their potential to support roosting bats based on the presence of any PRFs. As with the previous findings by Ramboll (2014) three mature Oak trees were considered to support definite PRFs in the form of cracks within branches and fissures in the stems. These trees were all considered to be of **Moderate** roost potential and their locations are shown in **Fig 6** below. No PRFs were noted on any of the mature *Populus* spp trees and these were all considered to be of **Negligible** roost potential.

Figure 6. The locations of the three mature Oak trees with PRFs identified on (indicated by red circles).



There are 4 buildings present on site and the assessment of their bat roost potential is provided below in **Table 2**.

Table 2. Updated assessment of the buildings for roosting bats.

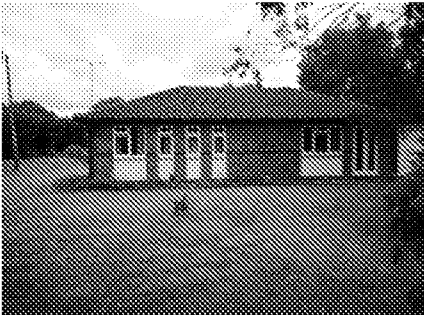
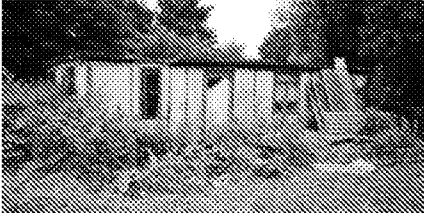
Building Name	Figure	Description of Construction	PRFs	Assessed Potential
Bungalow		Brick built bungalow with interlocking concrete roof tiles. PVC windows and soffits.	A small number of gaps between roof tiles.	Low number (approx. 150 – 200) of old (likely) <i>Plecotus</i> spp droppings noted in loft space (Fig 7). <i>Known Roost</i>
Large Barn / workshop		A workshop / barn concrete brick construction with asbestos roof and cladding.	Gaps underneath the bottom of asbestos where it meets the brickwork.	Low
Barn		Prefabricated workshop of plywood construction with felt lined roof.	Although this building is in poor condition, internal light levels are high and there were no noted cavities suitable for roosting bats.	Negligible
Greenhouses		Large metal framed greenhouses	No PRF's due to the construction of this building.	Negligible

Figure 7. Collection of old bat droppings within the loft space of the bungalow.



4.5 Badgers

4.5.1 Pre Existing Information

SBIC do not hold any records for Badger from within 2 km of the site.

4.5.2 Site Survey

During the Phase I survey no evidence of resident Badger was noted on the site. The site is however considered to be of **Moderate** quality for foraging.

4.6 Reptiles

SBIC hold 8 records for Slow Worm (*Anguis fragilis*) (with the most local of these situated in Barnham 1 km to the south east), 10 records for Grass Snake (*Natrix natrix*) (the closest being 0.7 km to the south), 1 record of Adder (*Vipera berus*) (located 1 km to the SW) and 2 records of Common Lizard (*Zootoca vivipara*) (again located in Barnham).

4.6.1 On Site Habitat Assessment

A presence absence survey undertaken in 2012 by PJC Ecology (2012) did not identify any reptiles across the whole site. Based on the current state of the site it is largely considered unsuitable for reptiles as the main grassland areas have been well managed over the past 5 years and do not support the required tussocky structure and heterogeneity favoured by reptiles. Notwithstanding this, the margins of the site (i.e. the immediate 1 m adjacent to the boundary trees lines / scrub) support more unmanaged grassland along with scrub / grassland interface. These areas are therefore considered to be of **LOW** potential for reptiles (accounting for the absence of reptiles from previous surveys and the poor suitability of adjacent habitats).

4.7 Great Crested Newts

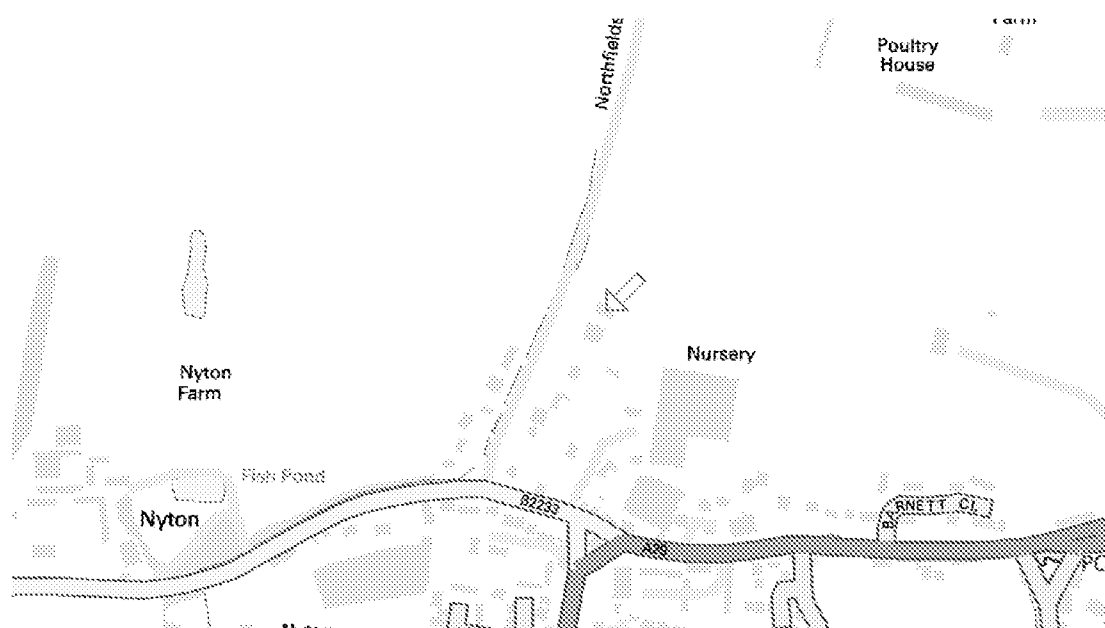
4.7.1 Local records

Two records of GCN presence are held by SBIC located in a pond adjacent to greenhouses approximately 0.9 km to the south of the site.

4.7.2 Water Bodies Within 500 m

Two waterbodies were identified within 500m of the site along with a ditch running along part of the western boundary (**Fig 7**) (this ditch however was not wet during any visits to the site and will presumably only hold water during periods of prolonged heavy rainfall). One of these ponds is marked as a fish pond whilst access was not permitted to view the other pond. Despite this, given the generally poor suitability of the terrestrial habitats on site and the distance of over 400m of both of these ponds, there are not considered to be any risks to terrestrial GCN from the proposals.

Figure 8. The two large ponds located 420 and 440 m to the west of the site. OS map reproduced under licence number 100048821.



4.8 Hazel Dormouse

4.8.1 Pre existing information

SBIC hold two records for Dormice form within 2 km of the site along with a reference within the Ramboll report (2014) to a record near Fontwell Park on the NBN interactive map (now no longer operational). Both the records are dated from 2008 and are located in Wandleys Copse 1 km to the north east.

4.8.2 Site assessment

The site can be considered to provide a suitable habitat for Dormice with a range of different tree and shrub species present of known benefit to Dormice (as per *The Dormouse Conservation Handbook* Bright et al., 2006) and linkages into the wider landscape (with a mature hedgerow running along Northfields lane to the west linked to woodland areas). No Dormice surveys were undertaken in support of the previous application however Rambolls (2014) did note the site supported suitable habitats for Dormice and with Bright et al., (2006) suggesting 'the presence of Dormice should be assumed within any areas of woody habitat within their range' the site can be considered of **Moderate** potential.

4.9 Notable Birds

Given the nature of the habitats around the site, SBIC hold a high number of records for notable bird species. Some of these have been listed in **Table 2** below which also indicates if suitable habitat for the species is located on site.

Table 2. Notable birds data as provided and SBIC and the presence of any suitable habitat for that species on site. NB Wetland birds have been excluded.

Species as Provided by SBIC Data	Scientific Name	Date of Last Record's	Suitable Habitat on Site (Y/N)
Lesser Redpoll	<i>Acanthis cabaret</i>	2015	Y mature trees / hedge
Barn Owl	<i>Tyto alba</i>	2015	Y fields for foraging*
Red Kite	<i>Milvus milvus</i>	2014	Y fields for foraging
Nightjar	<i>Caprimulgus europaeus</i>	2005	N
Skylark	<i>Alauda arvensis</i>	2014	Y but limited nesting opportunities
Swift	<i>Apus apus</i>	2010	Y buildings
Tawny Owl	<i>Strix aluco</i>	2014	Y tree lines / fields for foraging
Turtle Dove	<i>Streptopelia turtur</i>	2011	Y tree lines / hedgerow
Hobby	<i>Falco subbuteo</i>	2015	Limited opportunities

Kestrel	<i>Falco tinnunculus</i>	2015	Y fields for foraging
Cuckoo	<i>Cuculus canorus</i>	2015	Y trees
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	2011	Y mature tree lines
Nightingale	<i>Luscinia megarhynchos</i>	2015	Y dense shrub
House Sparrow	<i>Passer domesticus</i>	2011	Y building
Black Redstart	<i>Phoenicurus ochruos</i>		Y potentially in dilapidated building walls
Green Woodpecker	<i>Picus viridis</i>	2011	Y mature trees
Willow Warbler	<i>Phylloscopus sibilatrix</i>	2011	Y mature trees / hedgerow
Dunnock	<i>Prunella modularis</i>	2013	Y mature trees, scrub and hedgerow
Song Thrush	<i>Turdus philomelos</i>	2015	Y trees
Mistle Thrush	<i>Turdus viscivorus</i>	2011	Y trees / garden
Yellowhammer	<i>Emberiza citrinella</i>	2014	Y

* A Barn Owl was noted foraging around on site during the bat survey undertaken on the workshop / barn.

Based on the above association between habitat types present on site and the number of local records for Notable Bird species, the site can be considered of **Moderate – High** potential for breeding and nesting birds.

4.10 Invasive Species

As noted in the Ramboll report (2014), a small area of Japanese Knotweed is located on a mound in the south west corner of the garden of the bungalow (**Fig 9**). Based on previous notes it would appear this has been treated to some degree over the past few years as the growth is currently low (approximately 20 cm) and spread over an area approximately 4 m² in size.

NB Due to the overgrown nature of some areas of the site (particularly behind the green houses) this section does not constitute a definitive assessment of the presence of absence of invasive species on site.

Figure 9. Location and approximate extent of Japanese knotweed on site (indicated by blue oval).



4.11 Valuation

4.11.1 Habitats

The majority of the site comprises well-managed amenity grassland, which is only of value at the site level. The major trees located around section of the sites boundary (along with the hedgerow located on the western boundary) are well established and will provide a resource for breeding and nesting birds along with a potential habitat for bats (foraging and commuting) and Dormice. These features are therefore considered to be of **Local** value.

4.10.2 Protected species

Based on the assessments of the habitats on site and accounting for the surveys already undertaken and local records as held by SBIC, the site may support a variety of protected species, the numbers and population of which would determine the sites overall value. Appropriate recommendations have been made in the below section to identify if protected species are present along with mitigation.

5.0 RECOMMENDATIONS

5.1 Introduction

The below sections outlines a number of recommendations for further survey work required to fully assess the potential ecological impacts of the development and ensure and proposed mitigation and compensation appropriate and proportionate. In addition to this, measures are outlined to protect the existing features of value and provide enhancements post development.

5.2 Bats

5.2.1 Emergence

Based on the **Known Roost** and **Low** roost potential assessment of the bungalow and workshop / barn, further surveys are recommended as per **Table 3** below.

Table 3. Recommended minimum number of survey visits (from Table 7.3 (BCT, 2016)).

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability / Known Roost
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey*.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third could be either dusk or dawn*.

These surveys can only be undertaken **between May – September** (with two between May – August) and will help inform a more detailed mitigation and compensation strategy (if required) to minimise the potential impacts of this development scheme upon bats (please see accompanying updating bat surveys report prepared by Ecosupport 2017).

As the three mature Oak trees which were considered to be of **Moderate** roost potential are being retained, it is not considered necessary to undertake any targeted survey work.

5.2.2 Minimising disturbance to foraging and commuting bats

The BCT document Landscape and Urban Design for Bats and Biodiversity (Gunnell et al., 2012) makes the following recommendation to minimise impacts to bats from external lighting:

- Do not provide excessive lighting. Use only the minimum amount of light needed for safety.
- Minimise light spill. Eliminate any bare bulbs and any upward pointing light. **The spread of light should be kept near to or below the horizontal.** Flat cut-off lanterns are best.
- Use narrow spectrum bulbs to lower the range of species affected by lighting. Use

light sources that emit minimal ultra-violet light and avoid the white and blue wavelengths of the light spectrum **to avoid attracting lots of insects**. Lighting regimes that attract lots of insects result in a reduction of insects in other areas like parks and gardens that bats may be using for foraging.

- **Lights should peak higher than 550 nm**³⁵ or use glass lantern covers to filter UV light. White LED lights do not emit UV but have still been shown to disturb slow-flying bat species.³⁶
- Reduce the height of lighting columns. Light at a low level reduces impact. However, higher mounting heights allow lower main beam angles, which can assist in reducing glare.
- For pedestrian lighting, use low level lighting that is as directional as possible and below 3 lux at ground level but preferably below 1 lux.
- Increase the spacing of lanterns.
- Use embedded road lights to illuminate the roadway and light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- Limit the times that lights are on to provide some dark periods.
- Use lighting design software and professional lighting designers to predict where light spill will occur.
- Avoid using reflective surfaces under lights.
- Use temporary close-boarded fencing until vegetation matures to shield sensitive areas from lighting.

5.3 Reptiles

Given the habitats on site are generally of poor suitability, it is not considered an updated survey is necessary as the risk of reptiles colonizing the site over the past 5 years is considered low. Notwithstanding this, as a precaution, any longer areas of grassland around the sites margins (it is assumed the main body of the site will remain well managed until works start) will be strimmed in two phases under the supervision of an Ecological Clerk of Works (ECoW). The first cut will be down to a height no lower than 15 cm and cut lines form inside the site to the outer edge to encourage any reptiles into the understory of the retained hedgerows / habitats with a second cut (the following day) taking it right down to ground level. These works will be done immediately before any ground works to prevent the habitats re growing and will be down during the active reptile period (April – September)

when temperatures are above 12 °C with sunshine.

5.4 Dormice

Given the presence of wooded habitats / mature hedgerows on site, a nesting tube survey will be set up following the methodology as described within Bright et al (2006). This survey will help to establish presence / absence on site and inform any required mitigation / compensation. Surveys would require the erection of 70 nesting tubes in suitable habitats with these then checked from July – November (in order to achieve the 20 points on survey effort score as per Bright et al (2006) (please refer to the accompanying Dormice report for results and mitigation / compensation, Ecosupport 2017).

5.5 GCN

Given that the nearest suitable breeding pond is 400m away from the site, no formal mitigation works are considered necessary. However as a precaution, prior to the site being cleared, any potential refugia or hibernacula (such as log piles) will be searched through by hand by a licenced ecologist acting as a Ecological Clerk of Works (ECoW). Should any GCN be food during this process works will stop and Natural England consulted on the most appropriate course of action moving forward.

5.6 Nesting Birds

To ensure any impacts to nesting birds are avoided, the removal of trees / scrub will be undertaken outside of the bird-nesting season (March – August inclusive). If this is not possible a nesting bird survey will be carried out immediately before removal of the vegetation by a SQE. If any nests are found they will have to be left and monitored until the chicks have fledged before removal.

5.7 Protection of Hedgerows and Trees

All the existing hedgerows and trees that would be retained and trees should be protected from damage during the works. All the hedgerows should be fenced using Heras fencing or similar to prevent access by machinery. Where large mature trees are present, they should be protected using standard arboricultural tree protection measures which include protection of the canopy and prevents root compaction.

5.8 Invasive species

To ensure treatment to remove the Japanese Knotweed is conducted appropriately the guidance outlined within the Environment Agency's *Managing Japanese Knotweed on Development Sites: The Knotweed Code of Practice* (2013) should be followed.

5.9 Enhancements

Appropriate recommendations for the enhancement of the site are provided within section 5.0 of the Ramboll (2014) and these should be followed to provide ecological enhancements to a variety of species. Given the use of the site by foraging Barn Owl, these recommendations should however be supplemented with the inclusion of a Barn Owl box on one of the two mature Oak trees being retained in the central part of the site.

6.0 CONCLUSION

The Land North of Nyton Road site comprises a series of fields (some of which were previously used for pasture though now all managed improved) tree lines, greenhouses a work unit and a residential bungalow located within on the outskirts of the village of Westergate. The redevelopment of the site will entail the demolition of the existing d structures and subsequent redevelopment of the site for up to 268 new dwellings. In support of this application a suite of updated ecology surveys have been recommended some of which will continue after the reserved matters application has been submitted (i.e. on going checks of the Dormice tubes). The results of these recommended surveys will be provided in separate reports to support this application and will make recommendations to mitigate and compensate against any ecological impacts to protected species as appropriate.

7.0 REFERENCES

Bright, P., Morris, P., & Mitchell-Jones, T., (2006) The Dormouse Conservation Handbook 2nd Edition. English Nature

Collins (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition

Gunnell, K., Grant, G., & Williams, C., (2012) Landscape and Urban Design for Bats and Biodiversity

JNCC (2010) Handbook for Phase 1 Habitat Survey

Natural England & Forestry Commission England (2014) Standing Advice for Ancient Woodland and Veteran Trees.

Natural England, 2011 *Badgers and Development: A Guide to Best Practice and Licensing*

Ramboll (2014) land at Nyton Road and Northfields Lane, Westergate and land off Fontwell Avenue, Eastergate: Ecology Report.