

AN EXTENDED PHASE ONE AND PROTECTED SPECIES SURVEY



GILLAS LANE



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CONTENTS

SUMMARY	4
A INTRODUCTION	6
A.1 Background to Development.....	6
A.2 Personnel	7
A.3 Objectives of Study.....	7
B RELEVANT LEGISLATION AND PLANNING CONTEXT	8
B.1 National Planning Policy Framework.....	8
B.2 Protected Species Legislation.....	8
C SURVEY AREA AND METHODOLOGY	10
C.1 Survey Area.....	10
C.2 Methodology	11
C.2.1 Desktop Study.....	11
C.2.2 Field Survey	11
C.2.2.1 Survey Equipment.....	11
C.2.2.2 Phase 1 Habitats.....	11
C.2.2.3 Protected Species.....	11
C.2.2.4 Otter and watervole survey	11
D RESULTS.....	13
D.1 Desktop Study	13
D.1.1 Pre-existing Information	13
D.1.2 Consultation	13
D.2 Field Survey.....	14
D.2.1 Habitats.....	14
D.2.2 Species.....	16
E ASSESSMENT	18
E.1 Habitat Conservation Value	19
E.2 Protected Species.....	19
E.3 Limitations	19
E.4 Impact Assessment.....	20
F MITIGATION AND RECOMMENDATIONS	20
F.1 Further Survey.....	20
F.2 Mitigation Requirements	20

SUMMARY

E3 Ecology Ltd was commissioned by Persimmon Homes NE to undertake an extended phase 1 habitat survey and protected species assessment of land of Gillas Lane, Houghton-Le-Spring. Work was completed in October and December 2012.

The proposed development comprises the creation of approximately 63 new residential dwellings, with their associated infrastructure, public open space and landscaping.

Extended phase 1 survey indicated that the majority of the site is of low ecological value, comprising improved grassland, small areas of tall ruderal vegetation, immature mixed plantation, and a fragmented hawthorn dominated hedgerow. The habitats within the main body of the development area are considered to be of low ecological value.

To the south of the main development area is a small burn (known locally as the Rough Dene). This is surrounded by species poor semi-improved grassland which is grazed, and small areas of gorse scrub and tall ruderal habitats. A small number mature broadleaf trees are also present in this corridor. The habitats within this corridor are considered to be of local value, however as part of a wider corridor network, linking locally important site to the north and south, the habitat overall is considered to be of parish value

A targeted otter and water vole survey was completed in December 2012. No evidence of either species was recorded during the survey, although evidence of red fox and rabbit was found along the margins in the burn in the form of droppings and footprints for both species. The marginal habitat is considered to be insufficient to support any water vole burrow making activity, lacking the cover and diversity required by this species. The watercourse has the potential to be used by passing otter, but there are not considered to be any rest-up or holt locations in this section of the watercourse. The bed of the watercourse is quite heavily clogged with silt and is predominately gravel, making it generally unsuitable for use by crayfish.

No evidence of badger activity was found within the development area. Habitats are largely sub-optimal for this species, providing very little in terms of cover or productive foraging opportunities. No evidence of badger commuting through the corridor either side of the burn was recorded.

Bats are likely to roost within the residential housing that over-look the development site, and may forage along the burn and around the vegetation to the margins of the site. None of the mature trees within the site are considered to offer features potentially of use by roosting bats.

A modest assemblage of birds was recorded during the walkover survey. In total 12 species were recorded during the initial extended phase 1 survey, and subsequent aquatic mammal survey. These were blackbird, starling (overflying), common gull, blue tit, great tit, robin, dunnock, jackdaw, carrion crow, mistle thrush (overflying), grey wagtail and wood pigeon. Overall the development area is considered to be of local value to birds.

There are no ponds within the development area, or within the local area. As such there are no constraints anticipated with protected amphibian species.

Flood Risk Assessment (FRA) modelling of the site has shown that hard surface run-off from the new development can be accommodated within the schemes proposed drainage scheme, and any discharge into the burn can be controlled at a rate in keeping with the current

'greenfield' run-off rate (12 litres per second). The existing drainage catchment already services a wide area and includes both the discharge from public sewers immediately adjacent to the site, and others up and down stream.

No further potential issues with protected species were recorded during the walkover survey.

No further ecological field work is recommended at this stage. The work completed is considered to give a robust appraisal of the ecological constraints present.

Potential impacts of the development in order of conservation significance are:

- Loss of habitat of a low ecological value.
- Low risk of disturbing breeding birds if clearance work is completed during the spring/summer breeding period.
- Potential pollution of the adjacent watercourse from wind-blown site debris.
- Disruption of commuting routes used by small number of common bat species.
- Low risk of disturbing commuting otter
- Reduction in connectivity through the site due to increased disturbance.

To address the potential impacts, the following mitigation measures are recommended:

- Water course will be protected by a physical barrier (Such as a heras style fence) during the construction period to prevent windblown site debris.
- The watercourse will be buffered from the development by a distance of at least 10m.
- No vegetation clearance will commence during the spring-summer (March to August) bird nesting period, unless a pre-works check has confirmed that nesting activity is absent.
- Lighting will be designed to prevent light spilling into the corridor around the burn and habitats at the margins of the development area.
- The landscaping scheme will look to encourage areas of species rich grassland, native scrub and broadleaf tree planting, to increase the number and value of habitats present within the site.

The local planning authority and Natural England are likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation and enhancement proposals are incorporated into the master-planning documents.

If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.

A INTRODUCTION

E3 Ecology Ltd was commissioned by Persimmon Homes NE to undertake an extended phase 1 habitat survey and protected species assessment of land of Gillas Lane, Houghton-Le-Spring. Work was completed in October and December 2012.

A.1 Background to Development

The site is located just off Gillas Lane, in Houghton-Le-Spring at an approximate central grid reference of NZ 348 489. Site location is illustrated below in Figure 1.

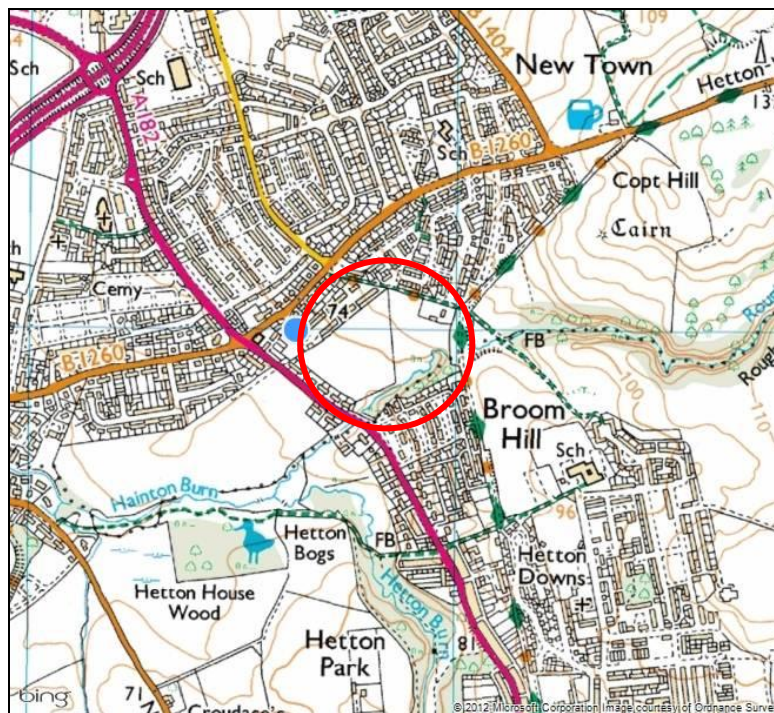


Figure 1 – Site Location
(Reproduced from the ordnance survey map with the permission of the controller of Her Majesty's stationery office. CJ Crown Copyright reserved. Licence number 100039392.)

The site is owned by Persimmon Homes NE.

It is proposed to create approximately 63 new residential dwellings, with their associated infrastructure, public open space and landscaping.

Figure 2, below, illustrates the currently available plans for the proposed development.



Figure 2 – Proposed Development Plans

A.2 Personnel

Survey work and reporting was undertaken by:

- Neil Beamsley BSc MIEEM
- Emma Barnes BSc MSc
- Jamie Coleman BSc MSc

The project was supervised by:

- James Streets BSc MSc MIEEM

Details of experience and qualifications are available at www.e3ecology.co.uk.

A.3 Objectives of Study

To determine the presence or otherwise of habitats of conservation value or protected species, the extent that they may be affected by the proposed development and, where necessary, to develop mitigation proposals that will allow development to proceed without significant adverse ecological effect.

B RELEVANT LEGISLATION AND PLANNING CONTEXT

B.1 National Planning Policy Framework

The Government's National Planning Policy Framework (NPPF) states the following:

- Plan policies and planning decisions should be based upon up-to-date information about the natural environment (Paragraph 158 and 165).
- Plan policies should promote the preservation, restoration and recreation of priority habitats, ecological networks and the recovery of priority species (Paragraph 117).
- Local planning authorities should set out a strategic approach in their Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure. (Paragraph 114).
- When determining planning applications in accordance with the Local Plan and the presumption in favour of sustainable development local planning authorities should aim to conserve and enhance biodiversity by applying a number of principles, including if significant harm resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused. (Paragraph 118).

B.2 Protected Species Legislation

The following protected species may be present on a site such as this:

Species	Relevant Legislation	Level of Protection
Bats (All species)	<ul style="list-style-type: none"> • Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended • Classified as European protected species under Conservation of Habitats and Species Regulations 2010 • Bats are also protected by the Wild Mammals (Protection) Act 1996 	<p>The WCA (1981) and Habitat Regulations (2010) make it an offence to:</p> <ul style="list-style-type: none"> • Intentionally kill, injure, or take any species of bat • Intentionally or recklessly disturb bats • Intentionally or recklessly damage destroy or obstruct access to bat roosts
Otter	<ul style="list-style-type: none"> • Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended • Classified as European protected species under Conservation of Habitats and Species Regulations 2010 • Otters are also protected by the Wild Mammals (Protection) Act 1996 	<p>The WCA (1981) and Habitat Regulations (2010) make it an offence to:</p> <ul style="list-style-type: none"> • intentionally kill, injure, or take otters • intentionally or recklessly disturb otters • intentionally or damage destroy or obstruct access to otter holts or any place used by the animal for shelter or protection
Birds	<ul style="list-style-type: none"> • Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act 	<p>The WCA (1981) makes it an offence to (with exceptions for certain species):</p> <ul style="list-style-type: none"> • Intentionally kill, injure or take any wild bird • Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) • Intentionally take, damage or destroy eggs • Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests
Badger	<ul style="list-style-type: none"> • Protection of Badgers Act 1992 • Badgers are also protected by the Wild Mammals (Protection) Act 1996 	<p>The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly:</p> <ul style="list-style-type: none"> • Damage a badger sett or any part of it • Destroy a badger sett • Obstruct access to, or any entrance of a badger sett

Species	Relevant Legislation	Level of Protection
		<ul style="list-style-type: none"> Disturb a badger whilst it is occupying a badger sett
Water Vole	<ul style="list-style-type: none"> Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended Water voles are also protected by the Wild Mammals (Protection) Act 1996 	<p>The WCA (1981) makes it an offence to:</p> <ul style="list-style-type: none"> intentionally kill, injure, or take water voles intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection or disturb water voles whilst they are using such a place
<p><i>Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of damaging a place of shelter or disturbing those species given full protection under the act is extended to cover reckless damage or disturbance.</i></p>		

C SURVEY AREA AND METHODOLOGY

C.1 Survey Area

Figure 3 illustrates the approximate site boundary, whilst Figure 4 illustrates the broad habitats present on site and within an approximate 500m buffer zone.



Figure 3 – Aerial photograph illustrating the extent of the site with a redline boundary (Reproduced under licence from Google Earth Pro.)



Figure 4 – Aerial photograph centred on the site with a 500m radius illustrating the setting and the habitats it supports (Reproduced under licence from Google Earth Pro.)

The study area includes the site and adjacent land to allow for possible secondary impacts in line with Natural England recommendations.

C.2 Methodology

C.2.1 Desktop Study

Initially, the site was assessed from aerial photographs and 1:25000 OS plans. Following this, consultation was undertaken with the Local Records Centre and the Natural England 'Nature on the map' website.

C.2.2 Field Survey

C.2.2.1 *Survey Equipment*

The following items of equipment were utilised during survey work and analysis:

- LED Lenser P7 (210 Lumen) inspection lamp.
- Refrakta 210 lumen inspection lamp.
- Zeiss 8x30 binoculars.

C.2.2.2 *Phase 1 Habitats*

The field survey of the proposed site was conducted using the methodology of Natural England's Phase 1 survey, as outlined in their habitat-mapping manual¹. Each parcel of land was assessed by a trained surveyor and classified as one of approximately ninety habitat types. These were then mapped and the habitat information supplemented by dominant and indicator species codes and target notes where appropriate.

Survey was undertaken on 10th October 2012

C.2.2.3 *Protected Species*

As part of the extended Phase 1 survey, the risk of protected species being present was assessed from the consultation responses, field signs and local knowledge. If present, any trackways regularly used by badger and deer were mapped, and any badger sett usage assessed by the presence of freshly dug earth and/or bedding at the entrance. Wetlands were reviewed for their potential use by great crested newt, otter and water voles, with particular attention paid to possible otter sprainting sites and resting areas. The risk of reptiles using the site was assessed based on the habitats present. Structures and trees were assessed for the risk of supporting roosting bats. Likely use of the site by birds was assessed from the species seen during the survey, and the habitats present.

Where it is considered likely that protected species may be present and adversely affected by the proposals additional specialist surveys have been recommended.

C.2.2.4 *Otter and watervole survey*

Survey was carried out using a 300m walked survey of a single or both banks where access was available, starting with a prominent landmark such as a bridge where possible. All

¹ Handbook for Phase 1 habitat survey, A Technique For Environmental Audit, English Field Unit, Nature Conservancy Council, 1990

potential sprainting sites and resting areas were recorded. Where potential holt sites were identified, tracks and field signs were used to deduce the likelihood of otter and water vole usage.

A detailed site survey was undertaken and the results assessed against background research on the local otter status and distribution. From these data an assessment of the local nature conservation significance of the site was determined.

The presence or absence of mink, water vole and brown rat signs at each site were also recorded with an indication of the relative abundance of footprints and droppings along the 300 metre stretch. All field signs were marked upon the sketch habitat map.

Habitat information for each section was recorded in two ways, by selecting a number of habitat features and descriptions from the pro forma from the 'Water Vole Conservation Handbook' (R. Strachan, 1998), and undertaking a simplified river corridor survey map of the site. Details of the bank profile, watercourse depth and width and current were recorded, together with additional comments on features such as pollution and threats.

Survey was completed in December 2012.

D RESULTS

D.1 Desktop Study

D.1.1 Pre-existing Information

OS map & aerial photographs

Figures 1 (A1) and 3 (C1) show that the general land use in the surrounding area is residential housing, grazing land and some arable fields.

Nature on the Map

Consultation with the Nature England Nature on the map website indicates that there are no internationally important sites within close proximity to the development area.

There are three nationally important Sites of Special Scientific Interest (SSSI) within 1.5km of the development area. These are Hetton Bogs, Embleton Grassland and Joe's Pond. In addition Hetton Bogs is also a locally important Local Nature Reserve.

Habitats locally reflect some National Biodiversity Action Plan (BAP) habitats, namely fen, reedbed and ancient and semi-natural woodland.

Previous survey work by E3

Previous survey by E3 Ecology in the local area has highlighted the presence of common pipistrelle bat, whiskered/Brandt's bat and brown long-eared bat.

D.1.2 Consultation

Local Records Centre

Consultation with Environmental Records Information Centre (ERICNE) indicated that there are a number of locally designated, non-statutory Local Wildlife Sites within 2km of the development area. These are Rough dene, Embleton Quarry, Hetton Bogs, Hetton Park, Redburn Marsh, Hetton Lyons and Robin House/Moorsley Marsh. None of these sites are directly within the development area.

In addition, the local records centre were able to provide details of the following species known to occur with the local area: Water vole, common toad, small heath, common spotted orchid, northern marsh orchid, Western hedgehog, Dingy skipper, wall, brown hare, European otter, stoat, water shrew, noctule bat, common pipistrelle bat, white-letter hairstreak, and great crested newt.

D.2 Field Survey

D.2.1 Habitats

Improved Grassland

The site is dominated by improved grassland. This is grazed by a herd of around 20 cattle on a rotation, with a single wire electric fence dividing each grazing area within the field. Species within the sward are limited. Perennial rye grass (*Lolium perenne*) is dominant, with some occasional cock's foot (*Dactylis glomerata*), ragwort (*Senecio jacobea*), creeping buttercup (*Ranunculus repens*) and redshank (*Polygonum persicaria*).



Immature mixed plantation woodland

A small band of immature mixed plantation runs along the north eastern boundary of the site. The uniform age and location of this planting zone would suggest that the trees were planted as part of the earlier housing scheme, which over-looks the site. Species within the plantation include rowan (*Sorbus aucuparia*), sessile oak (*Quercus petraea*), hawthorn (*Crataegus monogyna*) and some smaller fruit trees.

Tall ruderal

Tall ruderal habitats are present along the southern boundary of the site, and form a link between the wider improved grasslands and residential gardens beyond. Species within the habitat include bramble (*Rubus fruticosus* ag.), cock's foot, rosebay willowherb (*Chamerion angustifolia*), creeping buttercup, creeping thistle (*Cirsium arvense*) and curled dock (*Rumex crispus*).



Species poor hedgerow

A single species poor hedgerow bisects the northernmost section of the site. The hedge is maintained, but has a number of significant gaps and is dominated by hawthorn, with a small number of elder (*Sambucus nigra*) also present. A single semi-mature ash (*Fraxinus excelsior*) tree is present with the hedge-line and a wire stock fence is present to the northern side.



Rough Dene corridor

The Rough Dene is outside, but immediately adjacent to the development boundary. The corridor comprises the burn which is approximately 1-1.5m wide, with a smooth flow, rippled in places. The bed is heavily silted, although in the faster flowing areas features a gravel base with some large cobble sized stones. The water depth varies from between 40mm and 400mm. The watercourse is culverted and also has a second drainage outflow discharging into the main flow. The surrounding vegetation is predominately species poor semi-improved grassland. Some evidence of grazing from the resident cattle was evident around the margins of the watercourse. Scrub and scattered semi-mature trees are also present within the marginal habitat.



The habitats present within the sites are indicated on figure 4 below:



D.2.2 Species

Otter and water vole

Dedicated survey of the watercourse to the south-east of the development site did not highlight any evidence of water vole or otter activity along the burn. The bankside vegetation is generally sparse and offers few potential burrow or feeding opportunities for water vole or holt making locations otter. A number of other mammal footprints were recorded during the survey, these were confirmed as being red fox and rabbit, in addition to domestic dog. A number of fox scats and rabbit droppings were also found along the margins of the watercourse.



Badger

No evidence of badger sett making, commuting or foraging activity was recorded during the walkover survey. Habitats provided by the site are generally of sub-optimal value due to a lack of cover and generally compacted ground. Some low-quality sett building locations may be present in scrub vegetation to the north east, outside of the site boundary, however these are quite exposed to potential sources of disturbance, such as domestic dogs, and are therefore considered to be sub-optimal.

Great Crested Newt

There are no ponds or other water-bodies within the site, therefore great crested newt and other protected amphibians are not considered to be a constraint associated with the development.

Bats

There are no buildings within the site. None of the immature/semi-mature trees within the development area are considered to be of a sufficient age to support features usually favoured by roosting bats. Habitats at the margins of the site may be utilised by foraging and commuting bats, with potential roosting location within the surrounding residential housing.



Birds

A modest assemblage of birds was recorded during the walkover survey. In total 12 species were recorded during the initial extended phase 1 survey, and subsequent aquatic mammal survey. These were blackbird, starling (overflying), common gull, blue tit, great tit, robin, dunnock, jackdaw, carrion crow, mistle thrush (overflying), grey wagtail and wood pigeon.

White-Clawed Crayfish

The bed of the watercourse is quite heavily clogged with silt and is predominately gravel, making it generally unsuitable for use by crayfish. There are a small number of cobbles of a

suitable size to be used by white clawed cray-fish, however these were in locations where the bed was clogged by the siltation.

Other significant species

A lack of suitable foraging and commuting habitats within the site makes the presence of species such as red squirrel, reptiles and protected invertebrates highly unlikely.

E ASSESSMENT

The value and significance of the habitats and species found was assessed against the following criteria developed from the Guidelines for Ecological Impact Assessment produced by the Institute of Ecology and Environmental Management².

Level of Value	Examples
International	<ul style="list-style-type: none"> • An internationally designated site or candidate site. • A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. • Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. • Any regularly occurring, nationally significant population/number of any internationally important species.
National	<ul style="list-style-type: none"> • A nationally designated site. • A viable area of a priority habitat identified in the UK BAP, or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. • Any regularly occurring population of a nationally important species, which is threatened or rare in the region or county. • A regularly occurring regionally or county significant population/number of any nationally important species. • A feature identified as of critical importance in the UK BAP.
Regional	<ul style="list-style-type: none"> • Viable areas of key habitat identified in the Regional BAP or smaller areas of such habitat, which are essential to maintain the viability of a larger whole. • A regularly occurring, locally significant number of a regionally important species.
County	<ul style="list-style-type: none"> • County designated sites. • A viable area of a habitat type identified in the County BAP. • Any regularly occurring, locally significant population of a species which is listed in a County "red data book" or BAP on account of its regional rarity or localisation. • A regularly occurring, locally significant number of a species important in a County context.
District	<ul style="list-style-type: none"> • Areas of habitat identified in a District level BAP. • Sites designated at a District level. • Sites/features that are scarce within the District or which appreciably enrich the District habitat resource. • A population of a species that is listed in a District BAP because of its rarity in the locality.
Parish	<ul style="list-style-type: none"> • Area of habitat considered to appreciably enrich the habitat resource within the context of the Parish. • Local Nature Reserves.
Local	<ul style="list-style-type: none"> • Habitats and species that contribute to local biodiversity, could only be replicated in the medium term, but are common in the local area. • Loss of such habitats would ideally be mitigated if local biodiversity is to be conserved and enhanced.
Low	<ul style="list-style-type: none"> • Habitats of poor to moderate diversity such as established conifer plantations, species poor hedgerows and unintensively managed grassland that may support a range of Local BAP species but which are unexceptional, common to the local area and whose loss can generally be readily mitigated.

² Institute for Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in the United Kingdom (Version 7 July 2006). <http://www.ieem.org.uk/ecia/index.html>.

E.1 Habitat Conservation Value

Habitat survey of the areas directly affected by the proposed development has shown that the site is of low ecological value, supporting a small number of species poor and commonly occurring habitats. The development area is dominated by a large area of improved grassland, currently used by a tenant farmer to graze a small head of cattle. To the margins are areas of tall ruderal, immature mixed plantation and a single species poor hedge. These habitats are considered to be of low ecological value, with the impact of the development being experienced on a local basis only.

A small burn (The Rough Dene) is present to the south east of the main development area. This feature and the surrounding riparian vegetation which comprises semi-improved grassland, scrub and small number of semi-mature trees is considered to be of local value. The feature is also likely to fulfil an important role as a green corridor between ecological significant sites to the north east and south of the development. The burn and surrounding vegetation is considered to be of up to parish ecological through its role in maintaining this strategic green corridor.

Hetton Bogs SSSI is located approximately 350m to the south of the development sites, and on the opposite side of the A182. The development area is considered to be sufficiently distant, when the road and existing housing is taken into account, from this sensitive site to cause any direct impacts from noise or additional lighting.

Flood Risk Assessment (FRA) modelling of the site has shown that hard surface run-off from the new development can be accommodated within the schemes proposed drainage scheme, and any discharge into the burn can be controlled at a rate in keeping with the current 'greenfield' run-off rate (12 litres per second). The existing drainage catchment already services a wide area and includes both the discharge from public sewers immediately adjacent to the site, and others up and down stream.

E.2 Protected Species

No evidence of protected species activity was recorded during the field survey work. The habitats within the development area are of predominately low quality, and are likely to only be of potential benefit to nesting and foraging species of bird.

Some low levels of bat foraging activity are also anticipated at the margins of the site, with a small number of bat roosting locations likely within the adjacent residential houses.

The Rough Dene corridor to the south east of the main development is likely to be of significantly greater ecological value, mainly as a foraging and commuting route for birds, bats and potentially occasional otter use. No evidence of protected species was recorded during the field work.

E.3 Limitations

Extended phase 1 habitat survey has been completed outside of the main summer growing period. While this has the potential to mean that some species were not visible during the survey, it is considered that given the predominately low value of the site, seasonality has not had a significant impact on the outcome of the field survey.

E.4 Impact Assessment

The likely effects of the proposed development, without appropriate targeted mitigation, are:

- Loss of habitat of a low ecological value.
- Low risk of disturbing breeding birds if clearance work is completed during the spring/summer breeding period.
- Potential pollution of the adjacent watercourse from wind-blown site debris.
- Disruption of commuting routes used by small number of common bat species.
- Low risk of disturbing commuting otter.
- Reduction in connectivity through the site due to increased disturbance.

F MITIGATION AND RECOMMENDATIONS

F.1 Further Survey

No further ecological survey is considered necessary, as field work completed is considered to provide suitably robust assessment of the ecological constraints associated with the site.

F.2 Mitigation Requirements

To address the potential impacts the following mitigation measures are recommended:

- Water course will be protected by a physical barrier (Such as a heras style fence) during the construction period to prevent windblown site debris.
- The watercourse will be buffered from direct effects of the development by a distance of at least 10m.
- No vegetation clearance will commence during the spring-summer (March to August) bird nesting period, unless a pre-works check has confirmed that nesting activity is absent.
- Lighting will be designed to prevent light spilling into the corridor around the burn and habitats at the margins of the development area.
- The landscaping scheme will look to encourage areas of species rich grassland, native scrub and broadleaf tree planting, to increase the number and value of habitats present within the site. Habitats within the buffer strip will be managed to preserve the existing value of the site and also buffer the habitat from the effects of the development,