www.landuse.co.uk

Basildon Borough Ecological Surveys

Prepared by LUC
January 2016

Planning & EIA
Design
Landscape Planning
Landscape Management
Ecology
Mapping & Visualisation

LUC LONDON
43 Chalton Street
London
NW1 1JD
T +44 (0)20 7383 5784
london@landuse.co.uk

Offices also in:
Bristol
Glasgow
Edinburgh

FS 566056 EMS 566057

Land Use Consultants Ltd
Registered in England
Registered number: 2549296
Registered Office:
43 Chalton Street
London NW1 1JD
LUC uses 100% recycled paper

Project Title: Basildon Borough Ecological Surveys

Client: Basildon Borough Council

Version	Date	Version Details	Prepared by	Checked by	Approved by
1.0	22/12/2015	First Issue	Lorna Roberts/Rebecca Turner	Lorna Roberts	Peter Lawrence
2.0	06/01/2016	Final Issue (following client comment)	Rebecca Turner	Peter Lawrence	Peter Lawrence

Contents

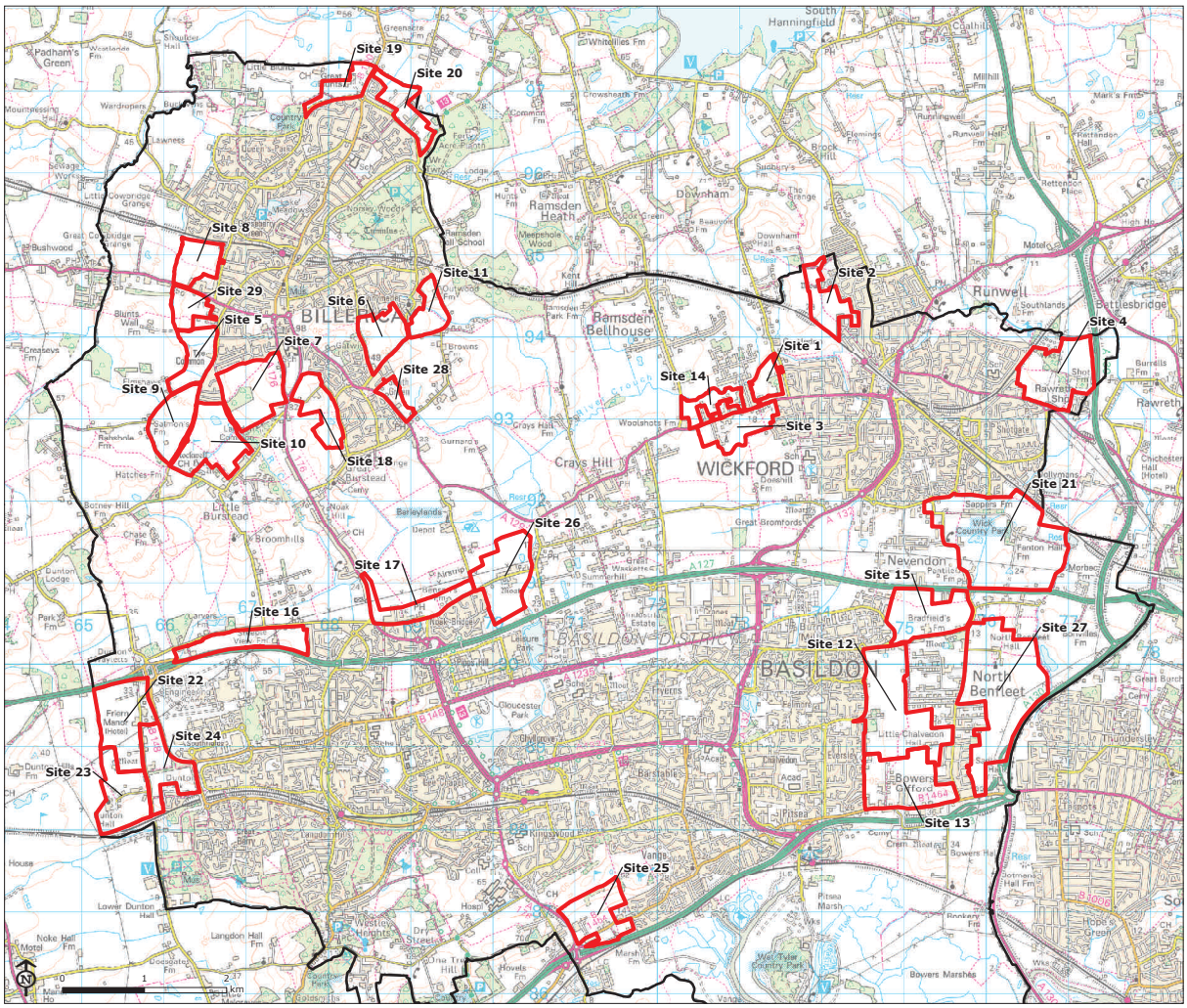
1 Introduction

1.1 In May 2015, LUC was appointed by Basildon Borough Council (BBC) to undertake ecological surveys of areas identified as preferred options and alternative options for development in the Local Plan. 29 such areas were identified by the Council for survey.

1.2 The original objectives of the study as identified within the Council's brief were:

- *To provide sufficient information to enable consistent and sustainable decisions to be made with respect to protecting biodiversity and geological conservation and to ensure that the Council have the necessary information on habitats to meet their obligations as required by the NPPF;*
- *To provide the Council with a clear and robust evidence document to inform decision making on the allocation of land for development and the associated Sustainability Appraisal and Strategic Environmental Assessment in addition to feeding into the HELAA;*
- *To provide an up to date source of biodiversity information to assist in the determination of planning applications;*
- *To identify potential mitigation measures required as part of new development to ensure habitats and biodiversity are maintained or enhanced; and*
- *To set a baseline and monitoring framework for further surveying and/or monitoring of species and habitats to establish whether the policies of the Local Plan successfully contribute to improvements in the quality and quantity of habitats.*

1.3 This report details the findings of the ecological survey and assessments undertaken for each Site.



Basildon Borough Council Ecology Surveys

Figure 1.1: Sites Subject to Ecology Surveys

Site boundary

Map Scale @ A3: 1:45,000

LUC

CB:VG EB:Goosen_V LUCLON 6485-01_005_Sites_overview 04/01/2016 Source: Basildon Bourogh Council

2 Method

Inception

2.1 An inception meeting was held to agree the scope and aims of the project and to ensure all data and background information was made available to inform the study.

Detailed Assessments of Sites

2.2 The following approaches were taken for the ecological assessments. The ecological assessments were necessarily 'high level' given that no design proposals were available for the Sites. Therefore, the development of any design proposals for the Sites should be informed by updated ecology input to inform design development, enabling the identification of impacts associated with specific schemes and the incorporation of appropriate mitigation proposals.

Desk Study

2.3 Biological records were reviewed to inform the assessments of each Site.

2.4 Data regarding designated sites and habitats was provided by the Council in July 2015, and obtained from publically available sources[1]. Data provided by the Council included that regarding Local Wildlife Sites and the location of Habitats of Principal Importance (as identified in accordance with the Natural environment and Rural Communities [NERC] Act, 2006, and formerly known as UK Biodiversity Action Plan Habitats) within the Borough, with publically held datasets reviewed including those relating to internationally and nationally designated sites (such as Special Protection Areas, Special Areas of Conservation, Ramsar Sites, Sites of Special Scientific Interest, National Nature Reserves and Local Nature Reserves) and notable habitats such as Ancient Woodland.

2.5 Records of protected and/or notable species (including those identified as Species of Principal Importance under the NERC Act, 2006, and as Essex Biodiversity Action Plan Priority Species within the Basildon Borough were provided by the Essex Wildlife Trust in December 2015, as well as further information regarding Local Wildlife Sites.

Phase 1 Habitat Survey

2.6 Phase 1 Habitat Surveys were undertaken in October and December 2015 for each Site. Surveys were undertaken in accordance with current best practice guidance[2], and included the rapid classification of all habitats within the Study Area boundary, and the identification of dominant or characteristic flora or any notable species. Target notes were recorded, detailing species identified and a description of the habitats where appropriate (for example, signs of management, habitat structure or notable features identified). These are provided in **Appendix 1**.

2.7 In addition to the classification of habitats, the survey was extended to include consideration of protected and/or notable species (for example, species of principle importance[3] or local BAP priority species). This included an assessment of habitat suitability as well as recording of any direct evidence noted during the survey, although detailed searches for such species, including notable flora, was not possible within the scope of the study. Current best practice methods were followed when considering the suitability of habitats for species. This also enabled the identification of potential constraints and opportunities for mitigation associated with the site (see below).

[1] For example, www.magic.gov.uk
[2] JNCC (1991). Handbook for Phase 1 Habitat Survey
[3] As defined by the NERC Act, 2006

Evaluation and Recommendations

2.8 The assessments provide common names for species (where species have common names, otherwise scientific names are provided), with **Appendix 2** providing the scientific names of all species mentioned in the text.

2.9 For each Site, the ecological features, or receptors (designated sites, habitats and/or species), were valued as far as possible given the extent of survey undertaken to determine their relative importance. This included consideration of the condition of the feature, for example particular quality of grassland areas. The approach to valuation was based on professional judgement as informed by tried and tested approaches, including those produced by the Chartered Institute of Ecology and Environmental Management[4] and the British Standards Institute[5]. This included consideration of habitats and species identified as of Principal Importance under the NERC Act, 2006, as well as Essex Biodiversity Action Plan priorities where appropriate given the scope of the study.

2.10 This valuation was considered alongside the potential for development impacts. The impact assessment was a high level assessment given the absence of development area proposals, and was informed by professional judgement to provide an indication of likely impacts and the potential significance of these. This identified any requirements for avoidance measures or any mitigation which may be required to enable development to proceed in accordance with planning policy and nature conservation legislation (for example, requirements for species translocation).

2.11 Consideration was then given as to what, if any, measures could be taken to either reduce the potential adverse effects identified. In addition, potential requirements for further ecological surveys were identified, for example should potential for protected species be identified or should more detailed vegetation surveys be required. Such requirements are identified in the assessments where appropriate.

Limitations

2.12 While every attempt was made to collect accurate baseline data and carry out thorough site assessments, all ecological surveys represent a 'snapshot' of activity, and changing habitat conditions, including as a result of seasonal changes in vegetation or levels of habitat management, may increase or decrease suitability for faunal species. This will also affect the potential to identify plant species, particularly subject to the level of detail of surveys. For example at certain times of year when species are not flowering, or when management such as grazing is particularly intense, it may be necessary to undertaken very detailed surveys (such as National Vegetation Classification surveys) to identify certain plant species. Ecological features are dynamic and often transient and it is not always possible to confirm the absence of a species through survey. Ecological surveys can generally be considered as up-to-date for 1 to 3 years dependent on the nature of the site, ecological baseline, and proposals and likely impact. The level of survey undertaken for this study was appropriate to meet the objectives, but more detailed survey is likely to be required as development proposals come forward.

2.13 Wherever possible the entire Site was accessed for survey. However, this was not always possible given issues such as the presence of fencing or livestock, or locked access. If direct access was not available, areas were viewed as much as possible from adjacent land, with surveys supported by aerial photography. In these cases the assessments adopted a precautionary approach to ensure that potential issues were considered, ensuring a robust assessment suitable to support this study. This is described in each assessment, where relevant.

2.14 In certain cases, where access was not granted or not possible during October, surveys were delayed until December, following further attempts to determine and obtain permission for access, with attendance from a Council officer. Although these surveys were undertaken outside of the generally accepted survey season for Phase 1 Habitat Survey, this was considered during the assessment and valuation of the habitats, with a precautionary approach taken where necessary. The weather conditions during December were particularly mild (supporting vegetation growth) and therefore were not considered to have an adverse effect on the results of the study.

[4] Guidelines for Preliminary Ecological Appraisal and Ecological Impact Assessment guidance

[5] British Standards Institute (2013). BS42020:2013 Biodiversity – Code of Practice for Planning and Development.

3 Findings and Assessment

3.1 The following sections present the findings of the ecology assessments for each of the Sites, with findings presented as a series of proformas which can be extracted as stand-alone documents.

3.2 Phase 1 Habitat maps for each study area subject to ecological assessment are provided within each Section, whilst target notes are provided in **Appendix 1**. Where appropriate, suggested amendments to the Site boundary are also provided within each Section.

4 Site 1: Land R/O London Road, Wickford

Survey Site	1	Location	Wickford

Site Overview

The Site is situated north west of Wickford and is surrounded by residential housing with the River Crouch to the north.

The Site is comprised of a variety of land uses, including private gardens associated with residential properties on Castledon and London Road, horse paddocks to the north and west, informal caravan parking in the south-west and areas of woodland.

Site Photograph

View of horse paddock to the south-west

Adjacent to horse paddocks in the south-west

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

There are no national or local nature conservation designations within the Site boundary.

The following Local Wildlife Sites are located in the vicinity of the site:

Wickford Riverside LWS – River Crouch to the east of the Site, beyond Castledon Road (0km)

Species records

There are no records of protected or notable species within the Site boundary.

Habitat Description (see Figure 4.1)

Poor Semi-improved Grassland

Areas of poor semi-improved grassland was noted throughout the site, supporting common and widespread

plant species such as perennial rye grass, white clover, ribwort plantain and common nettle. A field in the east of the Site also supported scattered trees comprising young oak.

Semi-improved Neutral Grassland

Semi-improved neutral grassland was noted in the south of the Site where it formed a number of pony paddocks, and in a field within the northern part of the Site. In the north the grassland was dominated by perennial rye grass, with abundant white clover and creeping buttercup, frequent yarrow, ribwort plantain and red fescue, locally frequent fleabane, occasional red clover and tufted-hair grass, and rare vetch *Vicia* sp Hawthorn was also present but was recorded rarely. The grassland here was rough with a relatively deep thatch.

In the south the grassland was more diverse with abundant bent-grass *Agrostis* sp., crested dog's tail, black knapweed, bryophytes and ribwort plantain. Creeping cinquefoil was locally frequent and red clover, cock's-foot and false oat-grass were all occasional. Vetch *Vici* sp., tare *Vicia* sp., ragwort and white clover were all present but rare.

Semi-natural Broadleaved Woodland

An area of semi-natural broadleaved woodland was noted in the centre and south-east of the Site. The canopy was dominated by oak with occasional ash. The shrub layer was sparse but included occasional elder and bramble. Holly was present but rare. The ground flora was dominated by ivy with occasional herb Robert and lords-and-ladies.

Dense scrub

Dense scrub was recorded along the boundary with the River Crouch in the north of the Site and in patches in the south-east of the Site. The scrub comprised a mixture of bramble, blackthorn, hawthorn, dog rose and elder.

Bare Ground

An area of bare ground was noted in the central part of the site surrounding a small industrial estate.

Buildings and Hardstanding

Buildings and areas of hardstanding within the Site included farm buildings and associated grounds in the south-east, industrial buildings and shed in the central part of the Site and several private residences around the Site periphery.

Fauna

Potential was identified for the following protected species to be present within the Site:

Badger – the habitats present on the site provide suitable foraging habitat for badger, whilst woodland and scrub habitats provide suitable opportunities for sett building.

Bats – The Site provide potential roosting habitat for bats within trees, whilst buildings may also provide roosting opportunities. Scrub, woodland and rough grassland habitats also provided potential foraging and commuting habitat for bats. The River Crouch adjacent to the north of the Site also provided potential foraging and commuting habitat, and connectivity to the wider landscape.

Water vole and otter – The River crouch to the north of the Site provides potential commuting habitat for otter, with adjacent scrub/woodland providing sheltering opportunities. Although water vole are known to be present along parts of the River Crouch, the River in the vicinity of the Site is largely over-shaded by dense scrub with little bank vegetation. This reduces its suitability for water vole which require open areas of vegetation for foraging.

Great crested newt – scrub, woodland and rough grassland habitats within the Site provided shelter, foraging and hibernation habitat for GCN. Several ponds were noted in the vicinity of the Site which may provide breeding habitat, however no waterbodies suitable for GCN are present within the Site itself.

Reptiles – rough grassland habitats, particularly in the north and south of the Site, provide suitable foraging habitat for common and widespread reptiles (in particular, common lizard, grass snake and slow worm), whilst scrub and woodlands would also provide shelter and overwintering opportunities. Whilst other areas of

grassland are not currently suitable to support reptiles, should the sward be left uncut or grazing intensity reduced, they could become suitable in the future. Birds – nesting birds are likely to be present within the woodland, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Area of greater floristic diversity within the Site may have the potential to support notable species or assemblages of invertebrates, in particular the area of semi-improved grassland in the north and south of the Site. Dormouse – the Site supports woodland and scrub, however these are considered unlikely to support dormouse given their relative isolation within the developed landscape and lack of connectivity with other large area of woodland or mature hedgerows. No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.	
Ecological Appraisal	
Designated Sites	No internationally designated Sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are also no Local Wildlife Sites present within the Site, however Wickford Riverside abuts the Site in the north-east. New development could therefore result in off-site impacts on this site including contamination and runoff via the River Coruch.
Habitats	Habitats within the Site are generally species-poor examples of common and widespread habitats. Areas of greater floristic diversity such as the semi-improved neutral grassland areas may provide greater value, whilst woodland and scrub habitats would provide habitat for a range of wildlife and and ecological connectivity. Development may result in habitat loss, as well as disturbance, including compaction and root damage, and contamination. The River Crouch which abuts the western Site boundary is also of higher value, with potential for development to result in contamination impacts.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the the site, with grassland of greater floristic diversity, scrub and woodland habitats likely to be of highest value to a wide range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • GCN associated with grassland, woodland and hedgerow habitats if breeding within the wider vicinity; • Otter which may use the River Crouch to move through the Site, and shelter within adjacent scrub habitats; • Reptiles within grassland habitats; • Badgers, particularly the presence of setts associated with woodlands and field boundaries; • Bats roosting within woodland and/or hedgerow trees, and buildings. Bats may also use linear habitats for foraging and commuting with

	fragmentation and habitat loss potentially affecting these species. • Nesting birds could also be affected by any removal of scrub or trees.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, otter, bats and birds subject to proposals.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain a proportion of habitats on Site to ensure that mitigation can be delivered. More valuable habitats which should be avoided include areas of semi-natural grassland, with woodland and scrub habitats providing habitat connectovoty through the Site.

Development which has the potential to affect the River Crouch, and best practice construction methods as detailed within a Construction and Environmental Management Plan, or similar, should be followed to protect the river and other retained habitats from contamination.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent harm to otter including protection of a buffer zone from the river edge and sensitive timing of works;

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals, such as invertebrates; and

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

- Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.
- Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

Overall the habitat mosaic within the Site is of greatest ecological value, including woodland, scrub/trees and rough grassland, with the potential for much of the Site to support protected or notable species as discussed above. Areas of higher sensitivity include the River Crouch and woodland in the centre and east of the Site.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as

informed by the above surveys.

Proposals should seek to retain a habitat mosaic and ecological connectivity through the site, in particular as provided by areas of grassland, woodland and scrub.

Firm measures are implemented to protect the River Crouch.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

Basildon Borough Council Ecology Surveys

Figure 4.1: Phase 1 Habitat Survey: Site 1- Land r/o 200 London Road, Wickford

- Site Boundary
- Target note
- Tree line
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)
- Poor semi-improved grassland
- Poor semi-improved grassland/Broadleaved scattered trees
- Hardstanding
- Buildings
- Bare ground
- Private residence

LUC

Map Scale @ A3: 1:2,600

5 Site 2: Land South and North of Barn Hall, Wickford

Survey Site	2	Location	Wickford

Site Overview

The Site is situated north-west of Wickford and is bordered by agricultural land to the north and west; a railway track to the south; and residential development to the east.

The Site is comprised of improved grassland which is used for cattle grazing north of the farm track in the north of the Site and for informal recreational use to south of the farm track. To the east of the site the land consists of a formal recreational ground with a playground, disused allotments and the Wickford Centre.

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

There are no national designations within 1km of the Site. The following Local Wildlife Site was identified within 1km:

Wickford Riverside - species-rich lowland meadow providing important invertebrate foraging habitat (35m south)

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 5.1)

Improved Grassland

Improved grassland was recorded in a field in the north of the site, north of a farm track, which was used for cattle grazing. Plant species included dominant perennial rye grass *Lolium perenne*, abundant white clover *Trifolium repens* and frequent creeping buttercup *Ranunculus repens*.

Semi-improved neutral grassland

Semi-improved grassland was recorded in an area of former allotments, associated with scattered scrub, in the east of the site, west of Haslemere Road. The grassland supported dominant perennial rye grass, abundant common nettle and great willowherb, locally abundant white clover, frequent Timothy and cock's-foot, and occasional bristly ox-tongue and tufted hair-grass.

Poor Semi-improved Grassland

Poor semi-improved grassland dominated the site, being present in three fields subdivided by hedgerows. The fields appeared to be used for informal recreation, with a footpaths running through. The grassland generally had a short sward height, with localised areas with a greater sward height. Species included dominant perennial rye grass with common species, such as Yorkshire fog, smaller cat's-tail, white clover, bristly ox-tongue, cock's-foot and creeping buttercup. A small area in the centre of the grassland along the

western boundary was found to have longer, tussocky structure. Species included dominant perennial rye grass, abundant cock's-foot, and occasional bristly ox-tongue and dock *Rumex sp*.

Amenity Grassland

Amenity grassland was noted to the east of the site, west of Alderney Gardens, and comprised a recreation ground (with a small building). This habitat supported common and widespread species, including dominant perennial rye grass, abundant white clover, and occasional dandelion and creeping thistle.

Scrub

Dense scrub was recorded in the north adjacent to the farm track; along the eastern boundary, near Maple Lane/Downham Road; in the south of the site adjacent to a hedgerow running north-south through the site; and in the south east corner of the field near to Jubilee Drive. Species included bramble agg., blackthorn, hawthorn, field maple, oak, ash and dog rose.

Scattered scrub was also noted in the former allotments. Species found included abundant bramble and occasional ash, hawthorn and blackthorn.

Tall Ruderal

Tall ruderal communities were situated west of the central north-south hedgerow in the south of the site. Species included dominant common nettle and frequent creeping thistle.

Hedgerows and Treelines

Hedgerows were noted along all of the field boundaries around the edge of the recreational ground, and included occasional trees. Species recorded included blackthorn, bramble, elm *Ulmus sp.*, hawthorn and *Prunus sp*. None of the hedgerows appeared to be species-rich.

Other habitats

A pond was noted in the south east corner of the site, near to Jubilee Drive, with a wet ditch on either side and surrounded by dense scrub.

A small area to the east of the site, The Wickford Centre, to the rear of properties along Guernsey Gardens was inaccessible but was noted to comprise of hard standing including car parking and buildings, amenity grassland, tall ruderal and scattered trees and scrub.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great Crested Newt – the presence of the pond and surrounding tall ruderal and scrub habitat provides terrestrial and breeding opportunities for GCN. Additional ponds were noted in the wider area, including immediately adjecent to the site to the centre of the site top the east and west.
- Reptile – conditions through much of the site were sub-optimal for reptiles due to the short grassland structure. However, the presence of hedgerows and small areas of rough grassland in the old allotment and to the centre of the fields in the west may provide suitable habitat for widespread and common species, particularly slow worm as well as common lizard and grass snake.
- Badger – the mosaic of grassland, scrub and hedgerows may provide potential foraging and sett building habitat.
- Bats – the mosaic of open grassland and hedgerows may provide suitable foraging and commuting habitat for bats. Occasional hedgerow trees and buildings within the site may also provide roosting opportuntities for bats.
- Birds – there is potential for common garden and woodland species to use the hedgerows, scrub and trees for nesting. Use of the grassland habitats by ground nesting and wetland/wader species is unlikely given levels of managementy and recreational activity.

Given the relatively low floristic diversity in general across the Site, and lack of other notable features, it is unlikely that notable species of invertebrate such as shrill carder bee would be present. Other potential

species issues considered but ruled out at this stage include brown hare given recreational activity. No invasive species were noted on the Site.	
Ecological Appraisal	
Designated Sites	No nationally/internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are also no Local Wildlife Sites present within the site. Wickford Riverside Local Wildlife Site is situated to the south of the site. However, there are likley to be minimal off-site impacts on the designation due to the presence of the train line which reduces ecological connectivity with the Site.
Habitats	Habitats within the site are common and widespread habitats with relatively low ecological value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Ponds are also identified as Essex Biodiversity Action Plan Priority Habitat and could be affected by habitat loss as well as contamination during works.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows and scrub habitats likely to be of highest value to a wide range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: Great crested newt associated with scrub, grassland (particularly rough grassland), tall ruderal communities, hedgerows and waterbodies. Reptiles associated with rough/infrequently managed grassland and tall ruderal communities, particularly adjacent to scrub and hedgerows. Potential for badger setts along field boundaries, within hedgerows and scrub, and foraging within the grassland. Bats foraging and commuting within the open grassland and hedgerows, as well as roosting in trees and buildings. Nesting birds within hedgerows, scrub and trees.
Ecological Avoidance, Mitigation and Enhancement Options	
Further surveys Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species	

surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger and bats subject to proposals. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows and trees within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan, or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The majority of the site is considered to be of low ecological value. The site's hedgerow network is considered to be of greatest ecological value, providing potential habitat for a number of protected and notable species and provide ecological connectivity.

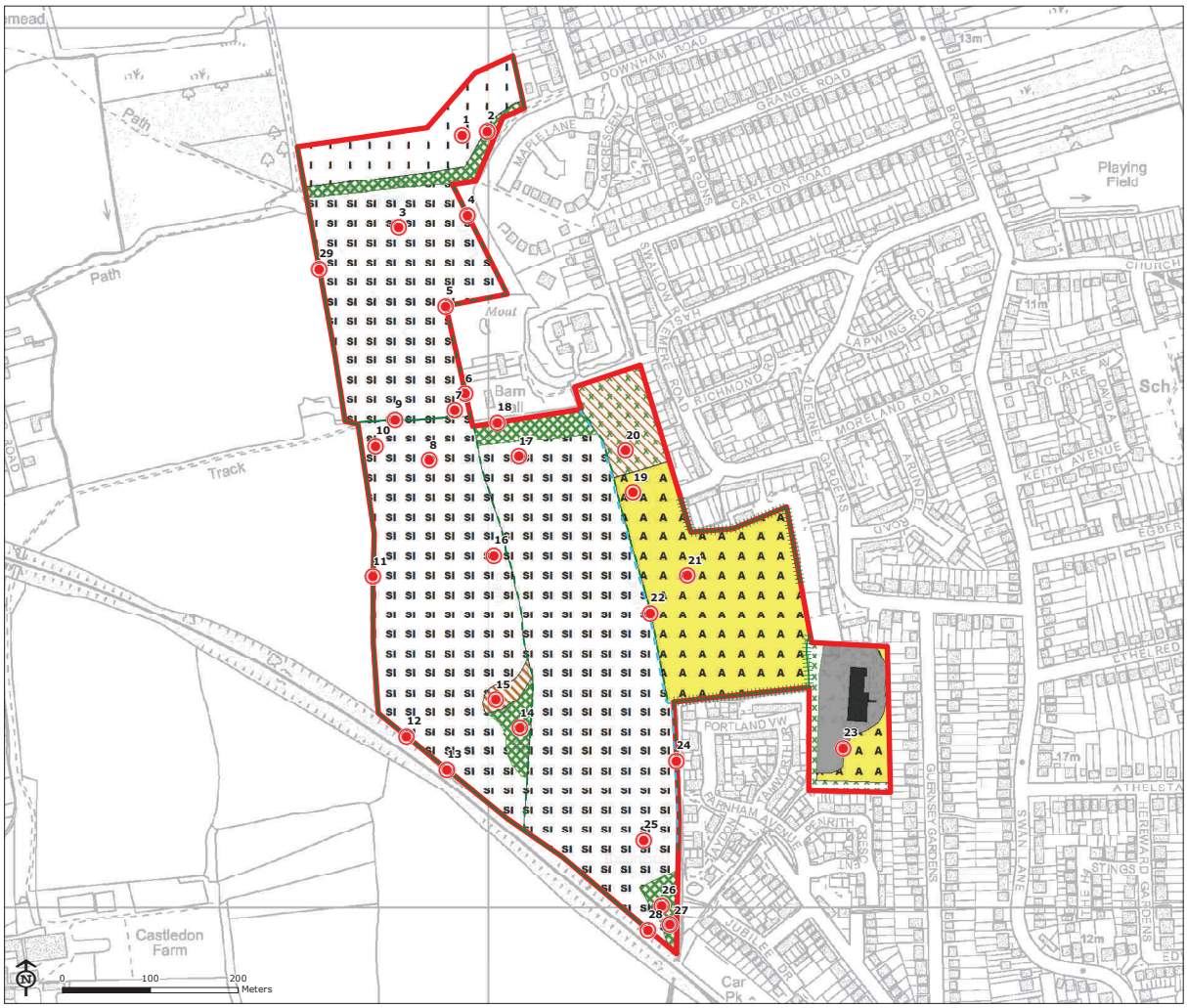
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

Basildon Borough Council Ecology Surveys

Figure 5.1: Phase 1 Habitat Survey: Site 2- Barnhall

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Dry ditch
- Scrub (dense/continuous)
- Scrub (scattered)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Improved grassland
- Poor semi-improved grassland
- Other tall herb and fern (ruderal)
- Standing water
- Hardstanding
- Amenity grassland
- Buildings

LUC

Map Scale @ A3: 1:4,200

6 Site 3: Land South of London Road, Wickford

Survey Site	3	Location	Wickford

Site Overview

The Site is situated to the west of Wickford with London Road to the north, agricultural land to the south and west, and residential housing to the east.

The Site itself was mostly comprised of agricultural land (arable fields), with areas of semi-improved grassland, poor semi-improved grassland and private gardens also present. Public footpaths are present in the east of the site (mainly used by dog walkers). There is also a network of hedgerows and dense scrub that runs across the Site.

Site Photographs

Field to the west

Large garden to the south

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the Borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

There are no national nature conservation designations within 1km of the Site. The following Local Wildlife Sites were identified within 1km:

Wickford Riverside - species-rich lowland meadow providing important invertebrate foraging habitat (500m north-east); and

Noke Wood – Mixed deciduous woodland supporting a diverse ground flora (900m south) .

Species Records

No records of protected and/or notable species were identified within the Site

Habitat Description (see Figure 6.1)

Semi-improved Neutral Grassland

Semi-improved grassland was recorded in the east of the Site, west of Tudor Way. The grassland had a rough, tussocky structure. Species included dominant perennial rye grass and cock's-foot *a*, locally abundant common fleabane and occasional vetch *Vicia sp*.

Semi-improved grassland was also noted adjacent to a treeline and track in the east of the agricultural part of the site with a relatively long sward. Species included dominant perennial rye grass, abundant white clover, and frequent dandelion and greater plantain.

Poor Semi-improved Grassland

Poor semi-improved grassland was recorded in the west of the Site, directly east of residential properties along Ramsden View Road. Coarse grassland species were noted with tall ruderal and scattered scrub. Species observed included dominant perennial rye grass, abundant bristly ox-tongue, locally abundant great willowherb and frequent dandelion.

Amenity Grassland

Amenity grassland was present at Brick House Farm comprising a private garden and included species such as dominant perennial rye grass, abundant red fescue, frequent Yorkshire fog and creeping buttercup in the east and dominant perennial rye grass, abundant Yorkshire fog, *bryophyte sp* and occasional red clover to the west.

Scrub

Dense scrub was noted in small areas throughout the site, including a small pocket of land adjacent to Ramsden View Road, south of Brick Farm House and east of Bell Farm. The scrub comprised species, including bramble, blackthorn, elder and hawthorn. A larger area of dense scrub was recorded along the southern boundary of the site. Species included dominant bramble, abundant oak, ash and guelder-rose.

Scattered scrub was also observed within the field in the east of the Site, west of Tudor Wayand the grassland to the east of Ramsden View Road. This was dominated by oak regeneration in the east, whilst the scrub in the west consisted of dominant bramble, abundant blackthorn and occasional oak.

Hedgerows and Treelines

Hedgerows were noted along field boundaries throughout the site which appeared to be largely species-poor and defunct. Species recorded included blackthorn, hawthorn, elm *Ulmus sp*, bramble and elder.

A treeline was also recorded adjacent to a track that dissected two arable fields. This was dominated by mature oak trees with abundant hawthorn. A treeline was also noted within the garden of Brick House Farm, which consisted of dominant field maple, abundant birch *Betula sp*, frequent hawthorn, and occasional oak and elm.

Arable

The site was dominated by arable fields (a single field west of Ramsden View Road and two larger fields to the east) which were ploughed at the time of the survey, resulting in bare ground.

Other habitats

Private gardens were recorded directly south of London Road and along Ramsden View Road. This included an intricate mosaic of habitats including grassland, scrub and mature trees. These may also support ponds

with a small pond noted within the garden of Brick House Farm. A large number of buildings were also recorded through the site, largely comprising residential properties.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great Crested Newt – The presence of a small pond within the Site and other ponds identified within 500m of the Site (as identified from OS base mapping; further investigation would be required) provides potentially suitable breeding habitat for GCN. Grassland, scrub, hedgerow and garden habitats throughout the site may provide terrestrial foragign and shelter habitat for GCN, whilst even arable habitats may be used y GCN for foragign and dispersal.
- Reptiles - rough grassland, and particularly areas with scattered scrub and adjecent to hederows, scrub and and gardens, may provide habitat for widespread and common reptile species, particularly slow worm as well as common lizard and grass snake.
- Badger – the mosaic of grassland, arable fields, scrub and hedgerows may provide potential foraging and sett building habitat for badgers.
- Bats – the hedgerows recorded may provide suitable opportunities for bats to forage and commute. Mature oak trees noted on Site may also provide suitable roosting opportunities, whilst the site also included numerous buildings which may provide bat roosting opportunities.
- Birds –nesting birds are likely to be present within the hedgerows, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Grassland areas were unlikely to support ground nesting species given their relatively small size and recreational disturbance, however arable fields (dependent on crops) may support such species including skylark and grey partridge. Use of the fields by wetland/wading birds is considered unlikely given the relatviely small size of the fields and vicinity to the settlement and associated disturbance.
- Brown hare - arable and grassland habitats within the Site have the potential to support this species, although recreational activity may reduce suitability.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within 1km of the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are no LWS's present within the Site, with the nearest LWS unlikely to be affected by any development given distance from the Site and lack of ecological connectivity.
Habitats	Habitats within the Site largely comprised common and widespread habitats with relatively low intrinsic value. Hedgerows are listed as a Essex Biodiversity Action Plan Priority Habitat[2], however there were no hedgerows within the site that were identified as potentially species-rich, and are therefore less likely to qualify as 'important hedgerows' under the Hedgerow Regulations (further assessment would be required). The hedgerows provide wildlife habitat in their own right, and ecological connectivity through and around the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential

	for such species to be present throughout the site, with hedgerows and scrub habitats likely to be of highest value to a wide range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Great crested newt associated with grassland, scrub, hedgerows, gardens and waterbodies. • Reptile associated with rough grassland, gardens, and hedgerows/scrub. • Potential for badger setts along field boundaries, and foraging within the grassland. • Bats foraging and commuting within the open grassland and hedgerows, as well as roosting in mature oak trees. • Nesting birds within hedgerows, scrub and trees; and ground nesting birds within arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, bats and birds subject to proposals. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows/treelines and trees within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example, grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The Site in general supports relatively common and widespread habitats of low intrinsic value, with their value mainly relating to the species which they may support.

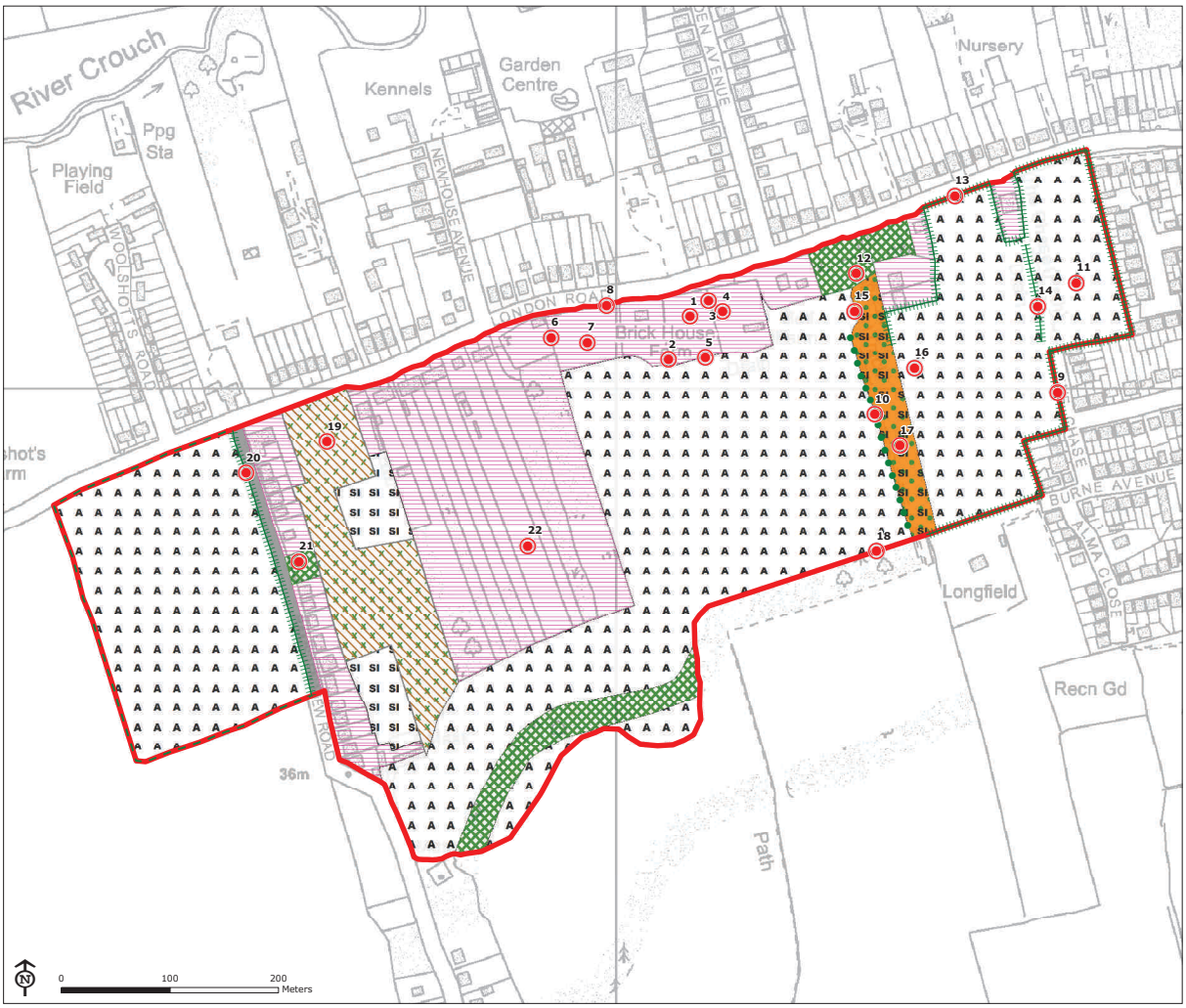
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 6.1: Phase 1 Habitat Survey: Site 3- Land South of London Road, from West of Tudor Way to East of Ramsden

- Site Boundary
- Target note
- Broadleaved scattered trees
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Neutral grassland (semi-improved)/Broadleaved scattered trees
- Poor semi-improved grassland
- Hardstanding
- Arable
- Private residence

LUC

Map Scale @ A3: 1:3,400

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

7 Site 4: Land at Shot Farm, Southend Road, Wickford

Survey Site	4	Location	Wickford

Site Overview

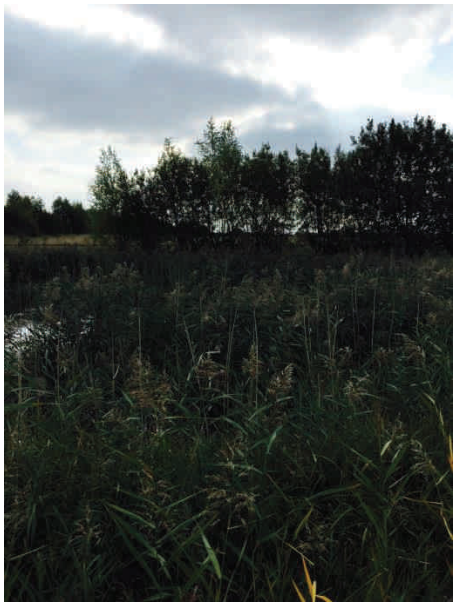
The Site is situated to the west of Wickford with London Road to the north, agricultural land to the south and west, and residential housing to the east.

The Site itself was mostly comprised of agricultural land (arable fields), with areas of semi-improved grassland, poor semi-improved grassland and private gardens also present. Public footpaths are present in the east of the site (mainly used by dog walkers). There is also a network of hedgerows and dense scrub that runs across the Site.

Site Photographs

View grassland and scrub to the wes of Shot Farmt

View of the pond to the north-east corner of the site



Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

There are no national or local nature conservation designations within 1km of the Site.

Species Records

No records of protected and/or notable species were identified within 1km of the Site.

Habitat Description (see Figure 7.1)

Semi-improved Grassland

Semi-improved grassland was recorded in a large area with scattered scrub to the west of the Site. The grassland has a relatively tall sward height that is left largely undisturbed. The grassland was dominated by bent-grass *Agrostis* sp, abundant false-oat grass, frequent white clover, dock *Rumex sp*, occasional smaller cat's-tail, bristly ox-tongue and rare vetch *Vicia sp*.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in the north-east and south-east of the Site. Grassland to the north-east had a relatively tall structure with small patches of tall ruderal vegetation. Species comprised of dominant perennial rye grass, abundant creeping thistle, and frequent common nettle. In the south-east of the Site the rough grassland was noted with scattered scrub that was grazed by goats. The grassland included the following species, dominant Bent-grass *Agrostis sp*, frequent cock's-foot, locally frequent soft rush and occasional ribwort plantain.

Amenity Grassland

Amenity grassland was present north of the Southend Road and comprised of football pitches used by a local football club.

Scrub

Scrub was found throughout the Site. Dense scrub to the north-east was noted in a small area along the eastern boundary and surrounding the pond. Species included dominant hawthorn, abundant field maple, frequent hazel, bramble and occasional crack willow. Scattered scrub to the south-east of the Site was recorded and included species, including hawthorn, blackthorn, ivy, bramble, field maple, ash regeneration and oak. Meanwhile, to the south-west a mosaic of dense and scattered scrub was recorded in a large portion of the Site and included species such as blackthorn, bramble, common nettle, oak and teasel.

Tall Ruderal Vegetation

Tall ruderal vegetation was recorded north of Shot Farm and south of the sewage facilities in areas of disturbed ground. Vegetation to the north of Shot Farm included species, such as abundant perennial rye grass and bristly ox-tongue, frequent *Chenopodium sp*, bramble and occasional red dead nettle whilst vegetation to the south of the sewage facilities comprised of dominant perennial rye grass, abundant creeping thistle, frequent common nettle, occasional butterfly-bush and rare dogwood

Arable

Arable land was present within the Site with a large field to the north-east and a smaller field to the south of Shot Farm. Both fields were ploughed at the time of survey, resulting in bare ground.

Buildings

Buildings within the Site were associated with Shot Farm and the local football club.

Other habitats

A pond was noted in the north-west corner of the Site and was vegetated with common reed.

A number of ditches were found throughout the Site with ditches associated with land at Shot Farm found to be wet whilst ditches to the south-west were dry. A wet ditch in the north-east of the Site was choked with vegetation, including common reed.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great crested newt – there is potential that GCN to be present within the site and wider area given the presence of ponds and wet ditches, as well as waterbodies identified within 500m of the Site (as identified from OS base mapping; further investigation would be required). The scrub, grassland and tall ruderal habitats provide opportunities for foraging and shelter for GCN.
- Badger – the mosaic of grassland, arable fields and scrub may provide potential foraging and sett building habitat.
- Bats – the mosaic of open grassland and scrub may provide suitable foraging and commuting habitat for bats. Buildings within the Site may also provide potential roosting opportunities.
- Reptiles – the presence of rough grassland and scattered scrub has the potential to provide suitable foraging, sheltering and overwintering potential
- Birds – nesting birds are likely to be present within the mosaic of grassland and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Arable fields (dependent on crops) may also support ground nesting species including skylark and grey partridge. Use of the fields by wetland/wading birds is considered unlikely given the relatively small size of the fields and vicinity to the settlement and associated disturbance.

Brown hare – the brown hare is unlikely to the be present within the Site due to the presence of scrub throughout and the isolation and management of the arable fields.

Water vole and otters are unlikely to be present within the Site, due to the isolation and size of the wet ditches from larger water bodies located in close proximity to the Site.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate, such as the shrill carder bee would be present.

No invasive species were noted within the Site.

Ecological Appraisal	
Designated Sites	No nationally/internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are also no Local Wildlife Sites present within or in close proximity to the site.
Habitats	The habitats recorded are common and widespread and have relatively low intrinsic value. However, the site supports a mosaic of habitats likely to provide opportunities for a range of wildlife, in particular rough grassland and scrub habitats in the south/south-east of the Site, and extensive loss of this habitat would be likely to result in a significant impact on the Site's ecology. Ponds are identified as an Essex BAP Priority Habitat. Development may result in loss or contamination of this habitat.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with rough grassland and scrub habitats likely to be of highest value to a range of species. The arable habitats are likely to be of lower value for species; however there is some potential for species such as farmland/ground nesting birds to be using these habitats for nesting and shelter. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat,

	severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: GCN breeding within waterbodies and utilising areas of suitable terrestrial habitat. Potential for badger setts within the rough grassland and scrub and along the field boundaries, and foraging through the site. Bats roosting in buildings, and foraging and commuting across the Site. Nesting birds within the large areas of scrub habitats, and ground nesting birds associated with arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, badger, bats, reptiles and birds.

Avoidance, Mitigation and Enhancement Options

Although in isolation the habitats within the Site are of relatively low value, areas of habitat mosaic should be retained within any development proposals for the Site to maintain habitat for wildlife and ensure that mitigation measures can be delivered. Ideally development would be focussed within the arable fields and localised pockets of amenity/low value grassland and areas of built development, or within other habitats wghere these are already located adjacent to development and roads (and are therefore subject to existing disturbance).

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptile, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Timing of works to avoid impacts on nesting birds.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The majority of the site comprising a mosaic of rough grassland and scrub is considered to provide opportunities for a range of wildlife, whilst the arable land and pockets of species poor grassland and developed land is considered to be of low intrinsic value.

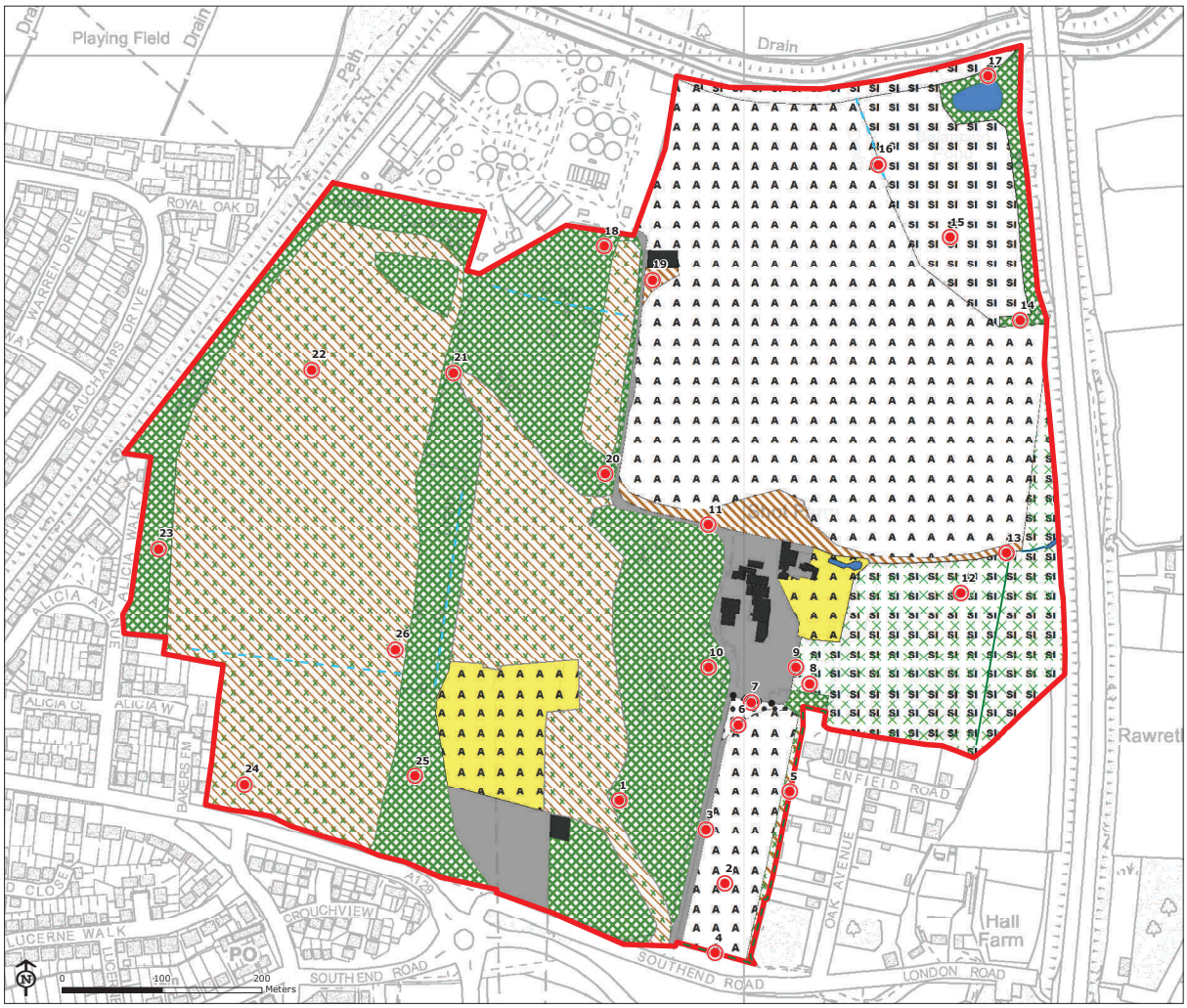
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain areas of habitat mosaic and ecological connectivity through the site.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



©Crown copyright and database rights, Ordnance Survey licence number 100018871, (2015)

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

Basildon Borough Council Ecology Surveys

Figure 7.1: Phase 1 Habitat Survey: Site 4- Land at Shot Farm, Southend Road, Wickford

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Dry ditch
- Tree line
- Wet ditch
- Scrub (dense/continuous)
- Scrub (scattered)/Other tall herb and fern (ruderal)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Poor semi-improved grassland
- Poor semi-improved grassland/ Scrub (scattered)
- Other tall herb and fern (ruderal)
- Standing water
- Hardstanding
- Arable
- Amenity grassland
- Buildings
- Bare ground

LUC

Map Scale @ A3: 1:3,700

8 Site 5: Land at Kingsmans Farm, Billericay

Survey Site	5	Location	Billericay

Site Overview

The Site is situated to the west of Billericay and is bordered by agricultural land in the north and west, Billericay Football Club to the south and Tye Common Road to the east.

The Site largely comprises of agricultural land with smaller areas of improved grassland used for horse paddocks and buildings associated with farms and private properties along Tye Common Road.

Site Photographs

View of grassland west of Curd's Farm

View of ploughed fields in the west

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated site was identified within 1km of the Site:

Mill Meadows LNR – the designation covers those parts of the site not designated as a SSSI (not within 1km). Supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (960m west).

The following Local Wildlife Sites are also located within 1km of the site:

Bluntswall Shaws ancient deciduous woodland (240m south-west);

Laindon Common – ancient acid grassland, and also supports populations of a rare arboreal ant *Lasius*

brunneus (400m south-east);

Frith Wood– ancient deciduous woodland (650m south-east);

Little Burstead Common - Site supports a mosaic of habitats including mixed woodland, grassland and several ponds. Rare species recorded here include long-winged cone-head bush cricket and the hoverfly *Cheilosia griseiventris* (630m south-west);

The Wilderness - Relict ancient woodland with several small ponds supporting populations of notable plant species such as bitter vetch (700m south); and

Bluntswall Wood – ancient deciduous woodland (700m west).

Species Records

Records of protected and/or notable species identified within the Site included:

Waxwing

Habitat Description (see Figure 8.1)

Improved Grassland

Improved grassland was recorded at Curd Farm and in a field directly west of Curd Farm. The improved grassland at Curd's Farm had a short grassland structure with red fescue dominant, abundant perennial rye grass, frequent creeping thistle and dock *Rumex sp*.

The improved grassland to the west of Curd's Farm had a varied structure as a result of horse grazing with disturbance cause by farm machinery accessing adjoining arable fields. Species included perennial rye grass, Yorkshire fog, vetch *Vicia sp* creeping buttercup, occasional ragwort and rare bristly ox-tongue.

Amenity grassland

Amenity grassland was noted within the private gardens at Kingsman Farm, Curd's Farm and the private garden immediately north of Curd's Farm.

Scrub

Dense scrub to the west of Curd's Farm was dominated by brambles, with frequent common nettle and great willowherb.

Tall Ruderal Vegetation

Tall ruderal vegetation was recorded on the western boundary of the Site associated with a wet ditch and adjacent to the improved grassland. Other patches of tall ruderal vegetation were recorded near both farm yards. Species included common nettle, creeping thistle, great willowherb and dock *Rumex sp*.

Hedgerows and Treelines

Hedgerows with mature trees throughout the Site and included species such as hawthorn, blackthorn, bramble and guelder-rose. Scattered trees were also recorded within fields, particularly in the south. Trees comprised of mature oaks, ash and silver birch *Betula pendula*.

Conifer Hedges and treelines were also recorded at Kingsmans Farm.

Arable

The majority of the Site was comprised of arable land, with land to the north of the improved grassland recently seeded as a grass ley, and land to the south of the improved grassland recently ploughed, resulting in bare ground.

Other Habitats

A number of wet ditches were recorded along field boundaries throughout the Site.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great crested newt – there is potential that GCN to be present within the site and wider area given the presence of wet ditches, as well as waterbodies identified within 500m of the Site (as identified from OS base mapping; further investigation would be required). The hedgerows, scrub, grassland and tall ruderal habitats provide opportunities for foraging and shelter for GCN.
- Badger – the mosaic of open grassland, arable fields and hedgerows may provide potential foraging and sett building habitat.
- Bats – the mosaic of open grassland and hedgerows may provide suitable foraging and commuting habitat for bats. Mature trees noted on site may also provide suitable roosting opportuntities, as may the various buildings recorded.
- Water vole – vegetated, wet ditches within the Site provide opportunities for water vole to be present within the site. However, these were considered unsuitable to support otter given poor connectivity to wider riverine habitats.
- The majority of the site is considered unsuitable for reptiles, although small areas of suitable tall ruderal or grassland habitats, including alongside ditches, may support low numbers or roaming indivdiuals.
- Birds –nesting birds are likely to be present within the hedgerows, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Grassland areas were unlikely to support ground nesting species given their relatively small size and recreational disturbance, however arable fields (dependent on crops) may support such species including skylark and grey partridge. Use of the fields by wetland/wading birds is considered unlikely given the relatviely small size of the fields and vicinity to the settlement and associated disturbance.
- Brown hare - arable habitats within the Site have the potential to support this species, with grassland habitats likely to be too short and regularly managed/grazed.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate, such as the shrill carder bee would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are also no Local Wildlife Sites present within the site, and impacts on those in the vicinity are is considered unlikely given distance from the site.
Habitats	Habitats within the site are common and widespread habitats with relatively low ecological value. Hedgerows are listed as a Essex Biodiversity Action Plan Priority Habitat, however there were no hedgerows within the site that were identified as potentially species-rich, and are therefore less likely to qualify as 'important hedgerows' under the Hedgerow Regulations (further assessment would be required). The hedgerows providewildlife habitat in their own right, and ecological connectivity through and around the site which could be fragmented as a result of development. The hedgerows and fields also supported occasional mature trees which would provide value for wildlife. The wet ditches will also contribute to ecological connectovoty whilst providing habitat in threir own right, although again these are common and widespread habitats in the wider area.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows and scrub

habitats likely to be of highest value to a wide range of species.

Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include:

- Great crested newt associated with wet ditches in particular, as well as grassland, scrub, hedgerows and gardens.
- Potential for badger setts along field boundaries, within hedgerows and scrub, and foraging within the grassland.
- Bats foraging and commuting along hedgerows and mature trees, as well as roosting in mature trees and buildings.
- Nesting birds within hedgerows, scrub and trees; and ground nesting birds within arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, badger, bats and birds subject to proposals. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows/treelines, trees and wet ditches within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example, grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site). A precautionary approach to works may also be required with regard to reptiles;

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or

quantity.

Overall Conclusion

Overall the site was considered to be of relatively low ecological value, although with potential to support a number of protected species.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows, treelines and wet ditches.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

Basildon Borough Council Ecology Surveys

Figure 8.1: Phase 1 Habitat Survey: Site 5- Land at Kingsmans Farm, Billericay

- Site Boundary
- Target note
- Scrub (dense/continuous)
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Dry ditch
- Wet ditch
- Scrub (scattered)/Other tall herb and fern (ruderal)
- Improved grassland
- Other tall herb and fern (ruderal)
- Arable
- Buildings
- Bare ground
- Private residence

LUC

Map Scale @ A3: 1:3,300

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

9 Site 6: Land East of Greens Farm Lane, Billericay

Survey Site	6	Location	Billericay

Site Overview

The Site is located to the south east of Billericay and is abutted by residential housing to the north and south/south west, with farmland to the south east and the Mill Meadows LNR/SSSI immediately adjacent to the west beyond the Green Farm Lane. Outwood Common Road forms the south and east site boundary.

The majority of the Site comprises of agricultural land comprising grassland with hedgerows/treelines, with Snails Hall Farm in the south of the Site.

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated sites have been identified within 1km of the Site:

Mill Meadows SSSI – unimproved neutral grassland supporting two red data book invertebrate species (10m west); and

Mill Meadows LNR – designation covers those parts of the site not designated as a SSSI. Supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (12m west).

Norsey Wood SSSI listed on the Ancient Woodland Inventory, large mixed chestnut coppice derived from acid oak woodland, supporting a rich variety of flora including herb Paris at it's only location in Essex (615m north); and

Norsey Wood LNR designation covers those parts of the wood not designated as SSSI, (600m north).

The following Local Wildlife Sites were identified within 1km of the Site:

Moses Spring Complex – A complex of connected mostly ancient woodlands supporting several UK Priority bird species including lesser spotted woodpecker, bullfinch and song thrush (725m east);

Norsey Meadow - ancient unimproved acid grassland supporting a range of species (730m north);

Parsonage Farm Green – ancient farm lane supporting species rich hedgerows with diverse ground flora (810m east);

Barenleys Farm Meadows – supports lowland dry acid grassland (990m east); and

Devils/Crays Wood – large area of ancient woodland (955m east).

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 9.1)

Semi-natural Broadleaved Woodland

A small area of semi-natural broadleaved woodland was noted in the north of the site near The Rising/Beverley Rise. The woodland comprised of dominant oak and occasional ash in the canopy; dominant blackthorn, abundant holly and bramble. In the understorey; and abundant ivy and rare redshank in the ground layer.

Scrub

Dense scrub was noted along the western boundary of the Site alongside Greens Farm Lane. Species included dominant bramble, abundant hawthorn, frequent ash, blackthorn and field maple, occasional elder and hazel, and rare apple *Malus sp* and elm *Ulmus sp.*

Tall Ruderal

Tall ruderal vegetation was recorded along occasional field margins, adjacent to hedgerows. Species included common nettle, great willowherb, creeping thistle and burdock *Arctium sp*.

Hedgerows and Treelines

Hedgerows were present throughout the Site, including those with associated banks and dry ditches. These hedges were well established with a width of up to 4m. Species included blackthorn, hawthorn, field maple, bramble, ash, elder, hazel and elm. Although the majority were species poor, occasional hedgerows in the east of the site appeared to be species-rich. The hedgerows also supported numerous mature trees, including oak and willow *Salix sp.*

Arable

The majority of the Site consisted of field that had recently been reseeded as grass leys. Species present included dominant perennial rye grass with varying abundance of Yorkshire fog, red fescue and cock's-foot.

Other Habitats

Private properties in the south of the site also supported grassland habitats with scattered trees. Species in the grassland included dominant perennial rye grass and abundant white clover. Scattered tree species included occasional hawthorn, crack willow, birch *Betula sp*, apple *Malus sp* and ash.

A number of dry ditches with dense vegetation were noted along the field boundaries, and an ephemeral pond was recorded in the south-west corner of a field in the west of the Site, adjacent to Greens Farm Lane. The pond was dry at the time of survey, however it may hold water from time to time.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great crested newt – there is low potential for GCN to be present within the site, with a single ephemeral pond recorded within the site which may hold water, and other ponds recorded within the 500m of the Site although relatively isolated from the site by roads and residential development (as identified from OS base mapping; further investigation would be required). If GCN are present, the site supports suitable terrestrial habitat comprising hedgerows and associated field margins, scrub and woodland. Subject to management, the fields themselves may also develop habitat suitable for GCN.
- Dormouse – there is potential for dormouse to be present within the Site due to the presence of a dense hedgerow network with the presence of large areas of woodland adjacent to the Site.
- Badger – the scrub, woodland and hedgerows with banks provide suitable foraging and sett building habitats for badgers. The Site is also well connected to woodland and agricultural land in the wider area.
- Bats – the site supports numerous mature trees with bat roost potential, with buildings also providing possiblte opportuntiies for roosting. The dense network of hedgerows within the site and good connectivity to hedgerows and woodlands in the wider area provide optimal habitats for

foraging and commuting bats.

- The majority of the site is considered unsuitable for reptiles, although small areas of suitable tall ruderal or grassland habitats, including alongside hedgerows and ditches, may support low numbers or roaming individuals.
- Birds – nesting birds are likely to be present within the hedgerows and trees, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The fields were considered unlikely to support ground nesting species given their relatively small size and presence of surrounding hedgerows/trees. Similarly use of the fields by wetland/wading birds is considered highly unlikely.

Brown hare are unlikely to be present given the nature of the fields, their relative isolation by roads, and given the management of the fields. It is unlikely that reptiles will be present on Site due to the lack of suitable rough, tussocky grassland habitat. However, there may be potential for reptiles to use the hedgerows to commute through the Site.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate such as the shrill carder bee would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	No nationally/internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Mills Meadow Local Nature Reserve and Mills Meadow SSSI are situated immediately to the west of the Site. New developments could result in off-site impacts to these sites including contamination (run-off, smothering and dust deposition), and also as a result of increased levels of visitor pressure due to an increase in the local population. There are no Local Wildlife Sites present within the Site. Given the distance between the Site and nearby LWSs and the lack of ecological connectivity it is considered unlikly that development would result in off-site impacts on these sites.
Habitats	Habitats within the site are common and widespread habitats with relatively low ecological value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows habitats likely to be of highest value to a wide range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: Great crested newt particularly if the ephemeral pond holds water, and

	associated with hedgerow, scrub and woodland habitats. Dormouse within the hedgerows. Potential for badger setts along field boundaries, within hedgerows, scrub and woodland, and foraging through the site. Bats roosting within the mature trees and buildings, as well as using the hedgerows for foraging and commuting. Nesting birds within hedgerows, trees, scrub and woodland.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, dormouse, badger and bats. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows/treelines and trees within the site where possible and ensure that connectivity to the wider area is maintained. Any development proposals should also seek to maintain a buffer in the west of the site from the Mills Meadow LNR/SSSI, including to provide screening. Proposals should also include the creation of new and/or enhancement of retained habitats within the site, including to provide alternative natural greenspace to reduce recreational pressure on the LNR/SSSI, which could include meadow creation.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site). A precautionary approach to works may also be required with regard to reptiles;

Measures to prevent impacts on dormouse under a NE licence, including habitat retention where possible, sensitive timing of works and replacement habitat creation.

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats, inlcuding retained hedgerows.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The site supports a dense network of hedgerows with mature trees which are likely to be of value to a range of wildlife in the local context, otherwise the habitats present on the site are of relatively low value, being common and widespread. The Mills Meadow LNR/SSSI is located immediately adjacent to the Site.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

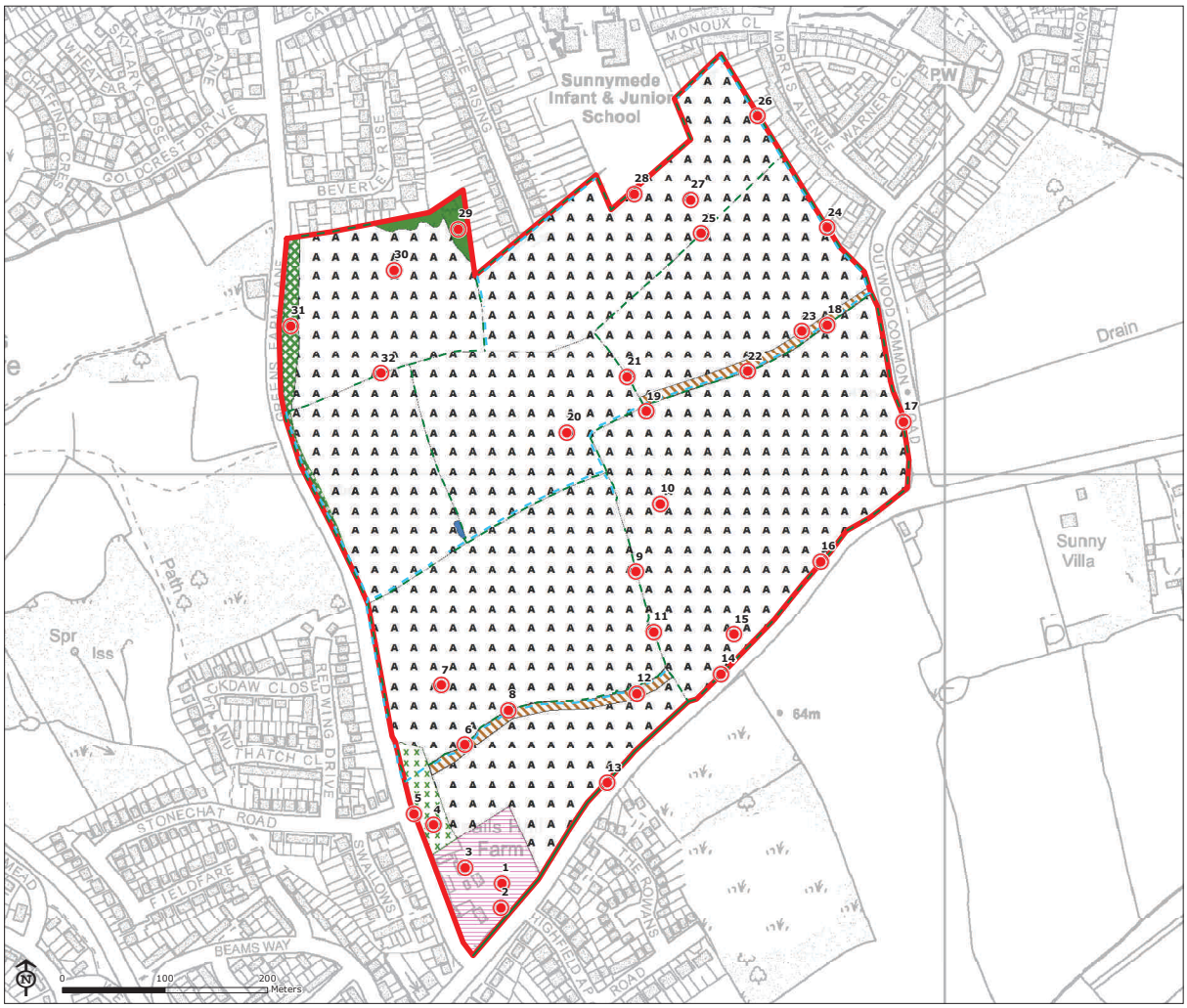
Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by dense network of hedgerows and trees.

Firm measures are developed to address potential indirect impacts on the Mills Meadow LNR/SSSI including as a result of any increase in recreational pressure.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 9.1: Phase 1 Habitat Survey: Site 6- Land East of Greens Farm Lane, West of Outwood Common Road, North

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Dry ditch
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Scrub (scattered)
- Other tall herb and fern (ruderal)
- Standing water
- Arable
- Private residence

LUC

Map Scale @ A3: 1:3,600

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

10 Site 7: Land East of Frithwood Lane, Billericay

Survey Site	Site 7	Location	Billericay

Site Overview

The Site is located to the south-west of Billericay, with the Burstead Golf Course adjacent to the west, Tye Common to the north and Laindon Road to the east. To the south the Site abuts Laindon Common and Little Burstead Common.

The Site itself comprises agricultural land, with areas of improved grassland ley and arable fields. The northern part of the Site is used informally for recreation (mainly dog walkers). A network of hedgerows runs throughout the Site, with a small area of woodland to the west.

Site Photographs

View of arable field looking north-east towards Laindon Road

Hedge bank in the south of the Site

Woodbank and mature trees along the boundary of an arable field

Frith's Wood – ancient woodland

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

One nationally designated site is present within 1km of the Site:

Mill Meadows SSSI – unimproved neutral grassland supporting two red data book invertebrate species (330m north-east); and

Mill Meadows LNR – designation covers those parts of the site not designated as a SSSI. Supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (330m north-east).

Five Local Wildlife Sites have been identified within 1km of the Site boundary:

Frith Wood LWS is located within the eastern part of the Site, identified as Ancient Woodland;

Laindon Common LWS – ancient acid grassland, and also supports populations of a rare arboreal ant *Lasius brunneus* (abuts the site in the south-west);

Little Burstead Common – Site supports a mosaic of habitats including mixed woodland, grassland and several ponds. Rare species recorded here include long-winged cone-head bush cricket and the hoverfly *Cheilosia griseiventris.* (abuts the Site – south-west);

The Wilderness LWS – Relict ancient woodland with several small ponds supporting populations of notable plant species such as bitter vetch (35m south-west);

Little Burstead Wood LWS –Inter-connected chain of three mixed deciduous (potentially ancient) woodland (325m to the south); and

Bluntswall Shaws LWS – ancient deciduous woodland (800m north-west)

Species records

No records of protected and notable species were identified within the Site boundary.

Habitat Description (see Figure 10.1)

Improved Grassland

Improved grassland was the most abundant habitat within the Site, located in the south and north-west of the Site where it was dominated by perennial rye-grass and other common and widespread species. The grass was not grazed at the time of survey however it was of a short length, potentially having been cut earlier in the year.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in the east of the Site within a small field abutting Laindon Road. The grassland had a slightly longer, tussocky structure in the eastern-most part of the Site. It was dominated by cock's-foot, with locally dominant nettle, abundant creeping thistle, field speedwell and red fescue, locally abundant ribwort plantain and frequent yarrow.

Semi-natural Broadleaved Woodland

An area of semi-natural broadleaved woodland, known as Frith's Wood, was noted in the west of the Site. A wood bank was present around the edges of the woodland/field edge. The canopy was dominated by sweet chestnut with abundant hornbeam and occasional beech, and oak present but rare. The shrub layer comprised abundant hazel coppice, sweet chestnut coppice, and hornbeam. Hawthorn, holly and rowan were all present but rare. The ground flora was sparse but where present was dominated by bracken.

Hedgerows and Treelines

Intact and defunct hedgerows were present throughout the Site. These were mostly species poor and included a mixture of hawthorn, blackthorn and elm. Mature oak trees were also noted throughout the majority of hedges, some of which also supported hedge banks. An outgrown hedge surrounding an area of poor semi-improved grassland in the east of the Site supported a greater diversity of species including holly, hawthorn, elm, hornbeam, oak, ash and elder which were all occasional to frequent. Treelines supporting mature oaks were also noted in the southern and northern parts of the Site.

Arable

Two arable fields were noted in the south-eastern and northern parts of the Site. These had been recently ploughed and drilled, and did not support any vegetation at the time of survey. In the centre of the southern-most field a group of trees surrounded a potential ephemeral pond, however this was dry at the time of survey.

Bare ground was also noted in a large field in the east of the Site. This had been recently ploughed and appeared to have previously supported grass ley.

Fauna

Potential was identified for the following protected species within the Site:

Great crested newt – Although arable habitat is considered sub-optimal for GCN, several grassland fields capable of supporting this species were recorded within the Site. The woodland in the west of the Site provided further suitable shelter, foraging and hibernation habitat, with hedgerows providing similar opportunities and connectivity through the site. Several ponds were noted in the vicinity of the Site which may provide breeding habitat, with one potentially ephemeral pond located within the Site boundary.

Reptiles –the main area of the Site suitable for common and widespread reptiles (in particular, common lizard, grass snake and slow worm) was an area of poor semi-improved grassland in the east of the Site, including a rougher area, and areas of scrub and bracken. It should be noted that whilst other areas of grassland are not currently suitable to support reptiles, should the sward be left uncut they could become suitable in the future, whilst field edges and hedgerows may also provide localised habitat including for

roaming individuals.

Dormouse – the Site supports woodland and hedgerows capable of supporting dormouse. The woodland within the Site is also connected to a network of further hedgerows and woodland outside of the site.

Badger –the habitats present on the site provide suitable foraging habitat for badger, whilst woodland within the site and banks around field margins provide suitable opportunities for sett building.

Bats – The Site provide potential roosting habitat for bats within trees in the woodland and along field boundaries (hedgerows and mature treelines). Hedgerows and treelines within the Site also provide suitable commuting routes for bats, whilst the woodland and grassland areas provide potential foraging habitat.

Birds – nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The fields within the site, and particularly those in the south which displayed lower levels of disturbance given a lack of footpaths, may also support ground nesting species. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development.

Brown hare – arable and grassland habitats within the Site have the potential to support this species, however it is considered that the southern part of the site is of higher suitability given the relatively high levels of disturbance from dog walkers in the northern parts of the Site.

There are ditches within the Site however these were considered unsuitable for water vole or otter given the lack of vegetation suitable for foraging and the low level of water within the ditches which were all but dry at the time of survey.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present, however the ancient woodland may support a more notable species assemblage.

No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.

Ecological Appraisal	
Designated Sites	No internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Given the distance and reduced ecological connectivity between the Site and nearby Nationally Designated sites (Mill Meadows SSSI and LNR) it is unlikely that these would be affected by works. Frith Wood LWS (in the west of the Site) is also listed on the Ancient Woodland Inventory[6]. Any new development could result in impacts such as habitat loss, root compaction/disturbance, disturbance of the soil profile and impacts on habitat as a result of increased recreational pressure. Although unlikely to be affected by habitat loss, the adjacent Laindon Common and Little Burstead Common LWS's could be affected by similar impacts such as contamination and in particular increased recreational pressure as a result of the increased local population. Other LWS's in the wider area are unlikely to be affected by works given distance form the site and/or reduced ecological connectivity given intervening development.
Habitats	Habitats within the Site are largely relatively common and widespread habitats with relatively low intrinsic value (althouh see above in relation to ancient woodland). Hedgerows are listed as a Essex Biodiversity Action Plan Priority Habitat[7], with one hedgerow within the Site identifed as potentially species-rich. Certain

[6] Spencer J W & Kirby K J (1992) An inventory of ancient woodland for England and Wales. Biological Conservation, 62, 77-93

[7] Available at http://www.essexbiodiversity.org.uk

	hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Hedgerow and tree loss (either as a result of removal or disturbance of adjacent ground) may therefore impact on hedgerows/trees and associated wildlife.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the the site, with hedgerows and woodland habitats likely to be of highest value to a wide range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • GCN associated with grassland, woodland and hedgerow habitats, as well as any waterbodies; • Reptiles within grassland habitats; • Badgers, particularly the presence of setts associated with woodlands and field boundaries; • Dormouse within the woodland or hedgerows; • Bats roosting within woodland and/or hedgerow trees. Bats may also use linear habitats for foraging and commuting with fragmentation and habitat loss potentially affecting these species; • Brown hare using open grassland and arable fields; • Nesting birds could also be affected by any removal of scrub or trees, or loss of grassland habitat.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, dormouse, bats, brown hare and birds subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, such as hedgerow surveys or woodland NVC survey.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain Frith Wood, as well as hedgerows and mature trees where possible. Development which has the potential to affect the Frith Wood LWS/ancient woodland will require mitigation. Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect the ancient woodland and other retained habitats from runoff, smothering and dust deposition and root compaction, with guidance suggesting a 15m buffer should be maintained adjacent to ancient woodland. New development would also result in an increase in recretational pressure and therefore mitigation should include measures to guard against this. Options could include fencing or native scrub planting along woodland edges to deter access, and the provision of high quality natural greenspace as an alternative resource to sensitive habitats.

Development may also result in increased recreational pressure on nearby LWS's including the adjacent Laindon Common and Little Burstead Common LWS's. This impacts must be fully considered, and mitigation may be required such as the creation of high quality alternative natural greenspace within the developoment, and/or habitat enhancement within the LWS's to increase their robustness to recreational pressure.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Mitigation to protect dormouse including avaoiding the severance of suitable habitat features (including hedgerows) from other nearby habitat. If removal of hedgerows is required, vegetation management or translocation of dormouse to a previously prepared receptor site under a NE licence may be required;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Enhancement of habitat outside of development areas to maintain or provide additional opportunities for species impacted by the proposals, such as brown hare;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

- Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The northern part of the site is considered to be the least sensitive in terms of future development, with less sensitive habitats present and also being already subject to recreational disturbance. The southern part of the site supported several sensitive habitat features (including a LWS identified as ancient woodland and mature trees, hedgerows and a potential ephemeral pond). Ancient woodland is particularly sensitive and subject to high levels of protection within planning policy.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

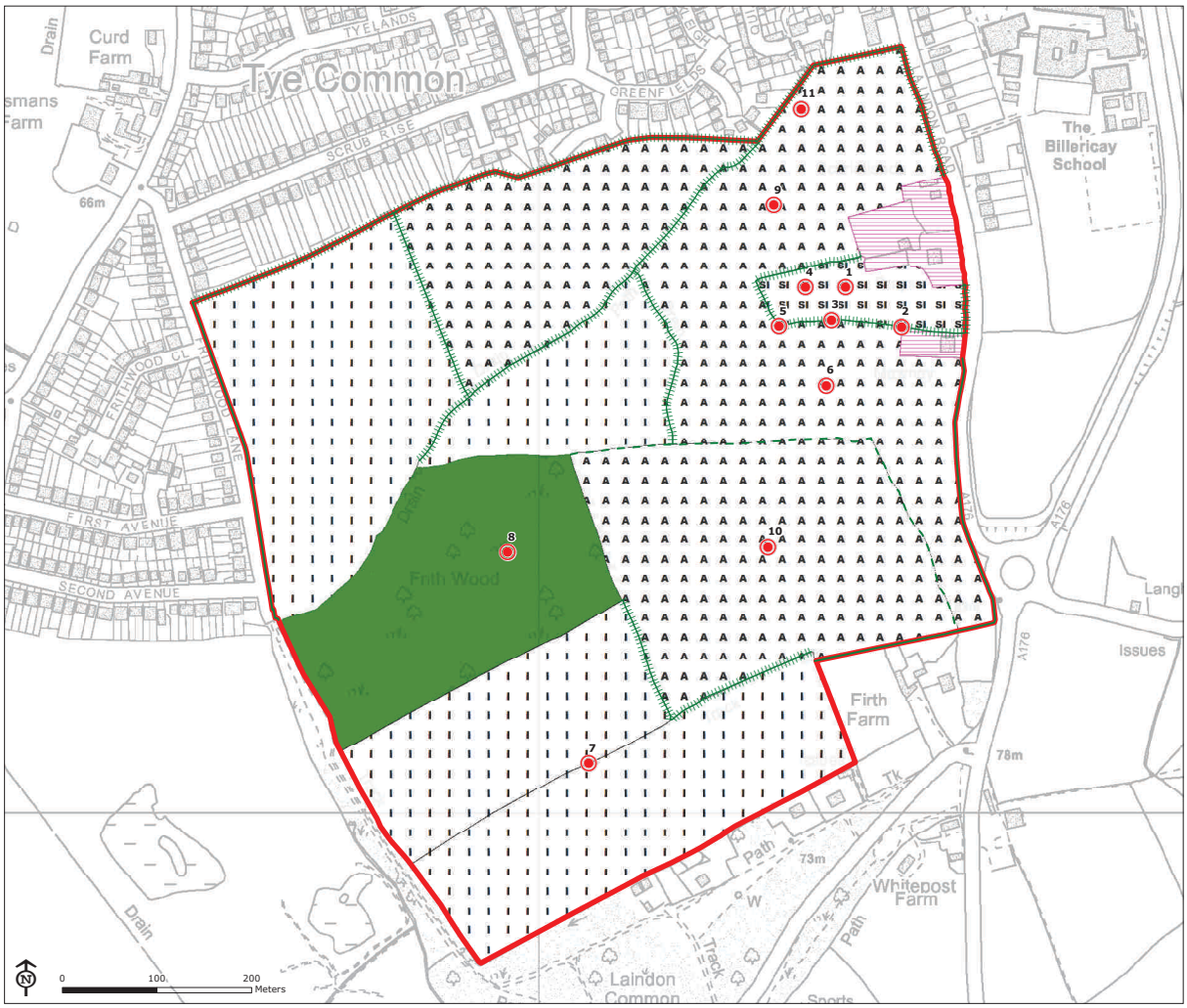
Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.

Measures are developed to avoid impacts on the Frith Wood LWS and ancient woodland, as well as adjacent LWS's.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

To ensure impacts are avoided, it is recommended that the Frith Wood LWS and ancient woodland is excluded from the proposed development site boundary (**see Figure 10.2**).



CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

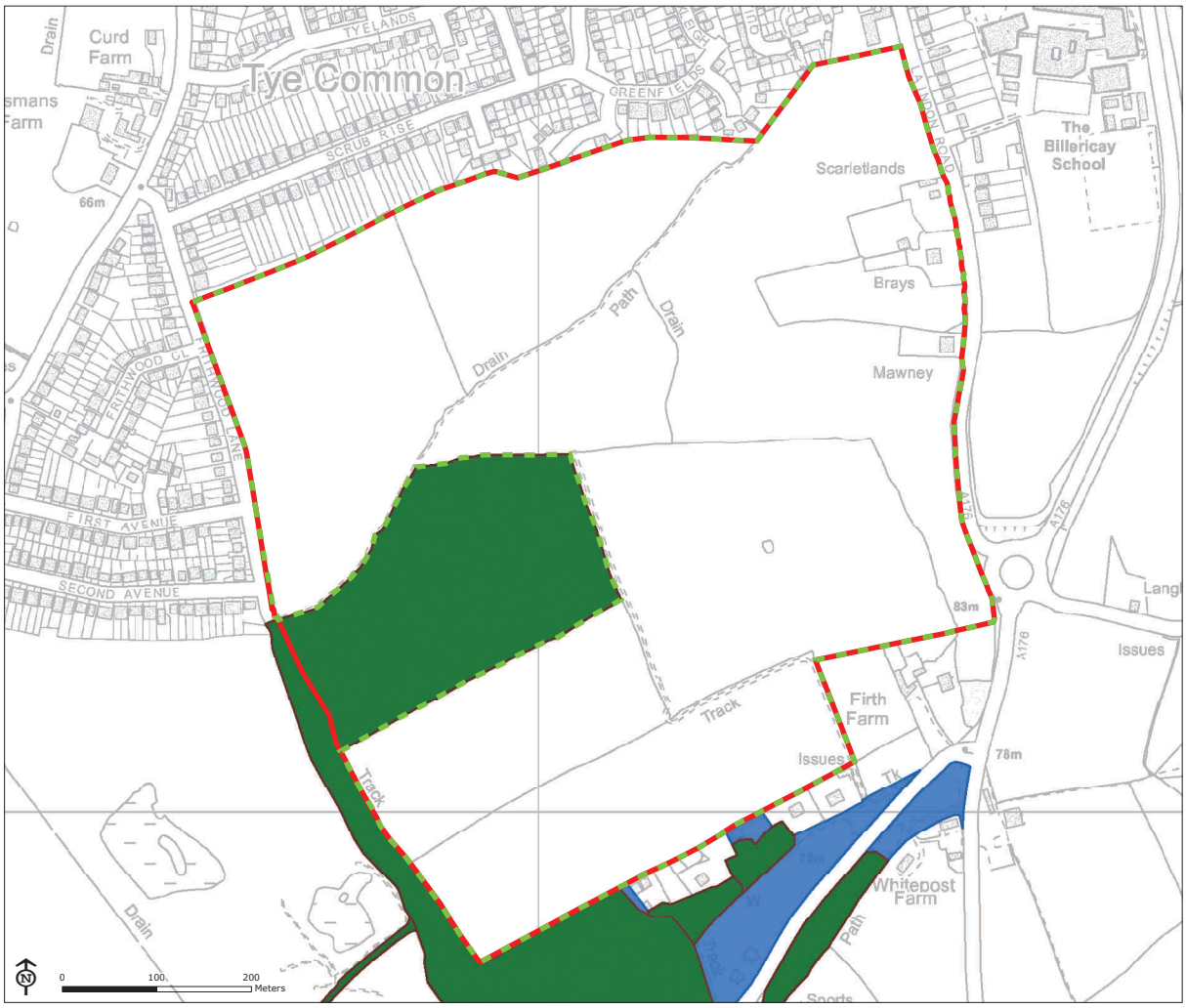
Basildon Borough Council Ecology Surveys

Figure 10.1: Phase 1 Habitat Survey: Site 7- Land east of Frithwood Lane

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Broadleaved woodland (semi-natural)
- Improved grassland
- Poor semi-improved grassland
- Arable
- Private residence

LUC

Map Scale @ A3: 1:3,900



CB:Green_C EB:Goosen_V LUCLON 6485-01_004_Suggested_site_boundaries 22/12/2015

Basildon Borough Council Ecology Surveys

Figure 10.2:
Phase 1 Habitat Survey:
Site 7- Land east of Frithwood Lane

- Site Boundary
- Suggested amendments to site boundary
- BAP Priority Habitat
- Local Wildlife Site

Map Scale @ A3: 1:3,900

LUC

11 Site 8: Land West of Mountnessing Road, Billericay

Survey Site	Site 8	Location	Billericay

Site Overview

The Site is situated to the east of Billericay, with Mountnessing Road to the east and London Road to the south. A railway line abuts the Site in the north, with residential development beyond the railway line, and further agricultural land is found to the west.

The Site currently supports arable farmland with hedgerows and a small stream running centrally through the Site.

Site Photographs

View of arable land towards the north-east of the site

Hedgerow and field margin in the north of the Site

Hedgerow and trees in the south-west of the Site

Stream-bank vegetation in the centre of the Site

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

There is one nationally designated site within 1km of the Site boundary:

Mill Meadows LNR –supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (1km south-east).

One Local Wildlife Site was identified within 1km of the Site:

Round Wood LWS – ancient woodland supporting the red data book species Cyperus sedge (1km north-west).

Species records

The following records of protected and notable species have been identified within the Site boundary:

Eurasian badger

Habitat Description (see Figure 11.1)

Arable

Arable was the dominant habitat type which made up 90% of the Site. The fields had been recently ploughed and drilled and supported no vegetation at the time of survey.

Improved Grassland

Field margins throughout the Site supported improved grassland dominated by perennial rye-grass and cock's-foot with abundant creeping buttercup and white clover. The grass length was relatively short on the most part; however it was slightly longer in some areas, particularly along the boundary with the railway in the north. The majority of these field margins were 1.5-2m in width, with larger field margin of approximately 5 metres in the west of the Site.

A further area of improved grassland was noted in the east of the Site, where Site access extended between two residential properties. Here the grassland was dominated perennial rye-grass, with abundant cock's-foot, Yorkshire fog and occasional dandelion. Common thistle was present but rare.

Hedgerows and Treelines

Hedgerows within the Site were species poor and dominated by blackthorn with hawthorn frequent to abundant, bramble occasional to abundant, elm occasional and rose present but rare. Two hedgerows within the Site supported mature oak trees (one to the west and the other in the northern part of the Site). A treeline dominated by Lombardy poplar was noted along the south-eastern Site boundary.

Running Water

A small stream was noted running through the centre of the site, which supported in-channel vegetation including occasional to abundant brooklime and fools watercress. The stream banks were steep and overgrown with vegetation that was dominated by tall ruderal species, with greater willowherb dominant, cock's- foot and creeping bent-grass abundant, cow parsley locally abundant, common figwort frequent, creeping buttercup locally frequent, and common ragwort, bristly ox-tongue, pendulous sedge, creeping thistle, dock *Rumex sp* and smooth hawks-beard rare.

A stream adjacent to the western site boundary held little water at the time of the survey, with no marginal or bankside vegetation.

Fauna

Great crested newt – although arable habitat is considered sub-optimal for GCN, several grassland field margins capable of supporting this species were recorded within the Site. The hedgerows throughout the Site provided further suitable habitat, and connectivity through the Site, with cracks and crevices in the ground providing opportunities for shelter, foraging and hibernation. Further suitable habitat was noted in the vicinity of the Site, with dense scrub along the railway embankment of particular note. Several ponds were noted in the vicinity of the Site which may provide breeding habitat.

Reptiles – field margins supporting a longer sward length (particularly those along the northern boundary of the Site, abutting the railway embankment) were suitable for reptiles. Tall ruderal vegetation adjacent to the stream also provided potential habitat.

Badger –the habitats present on the site provided suitable foraging habitat for badger, whilst woodland within the site and banks around field margins (along with the railway embankment abutting the northern Site boundary) provided opportunities for sett building. Records of badger from within the Site have been identified from biological records.

Bats – mature trees within the hedgerows provided suitable roosting habitat for bats within. Hedgerows and treelines within the Site also provided suitable commuting routes for bats, whilst running water provided suitable foraging habitat and further dispersal opportunities.

Birds – nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The fields within the site may also support ground nesting species. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development.

Brown hare – arable and grassland within the Site have the potential to support this species, particularly the longer field margins which provide suitable opportunities for sheltering.

Streams within the Site were considered unsuitable for otter given their small size and poor connectivity to larger watercourses. The central stream supported vegetated habitats with potential to support water vole. Although this was relatively short, with the western stream of reduced suitability, the presence of water vole could not be ruled out.

Hedgerows within the Site are considered sub-optimal for dormouse given that they are not connected to any areas of woodland, and being species poor do not provide an available food source for dormouse throughout the year.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present.

No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.

Ecological Appraisal	
Designated Sites	No internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Given the distance and reduced ecological connectivity between the Site and nearby nationally and locally designated sites it is unlikely that these would be affected by works.
Habitats	Habitats within the Site are relatively common and widespread habitats with relatively low intrinsic value. However hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habiat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site

	which could be fragmented as a result of development. The streams associated with the site were of relatively low value, being wither bare with little vegetated, or conversely dominated by dense vegetation without open water. However, these increase the habitat diversity on the site and may provide opportunities for a number of species as well as increasing ecologicl connectivity. Although arable field margins are also a Priority Habitat[7] this definition only includes those which are managed specifically for the benefit of wildlife. The field margins, where present, were mostly short in length and species-poor and therefore they do not meet the criteria as described within the BAP.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected species within the Site. However there is potential for such species to be present throughout the the site, with hedgerows likely to be of highest value to a wide range of species. The grassland and arable habitats are of lower value for protected species, however there is some potential for species such as brown hare or ground nesting birds to be using these habitats for shelter, depending on the level of management (the potential for such species to be present would increase should the field margins and grasslands develop a longer, ranker structure). Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: Reptiles within grassland habitats; GCN may use grassland and hedgerow habitats in particular; Badgers, particularly the presence of setts associated with and field boundaries; Bats roosting within hedgerow trees. Bats may also use linear habitats for foraging and commuting with fragmentation and habitat loss potentially affecting these species; Nesting birds could also be affected by any removal of hedgerows, trees or open grassland/arable habitats; Brown hare using open grassland and arable fields; Potential presence of water vole within streams.
Ecological Avoidance, Mitigation and Enhancement Options	
Further surveys Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, water vole, bats and birds subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, in particular hedgerow surveys. **Avoidance, Mitigation and Enhancement Options** Any development proposals should seek to retain hedgerows and mature trees where possible. Best practice construction methods as detailed within a Construction and Environment Management Plan or similar should be followed to protect retained habitats, including streams, from runoff, smothering and dust deposition and root compaction. If notable or protected species are confirmed as present, mitigation requirements may include: Timing of works to avoid impacts on nesting birds;	

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Measures to protect watercourses if water vole are present;

Enhancement of habitat outside of development areas to maintain or provide additional opportunities for species impacted by the proposals, such as brown hare;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

- Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDS, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.
- Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The Site in general supports relatively common and widespread habitats of low intrinsic value, with their value mainly relating to the species which they may support.

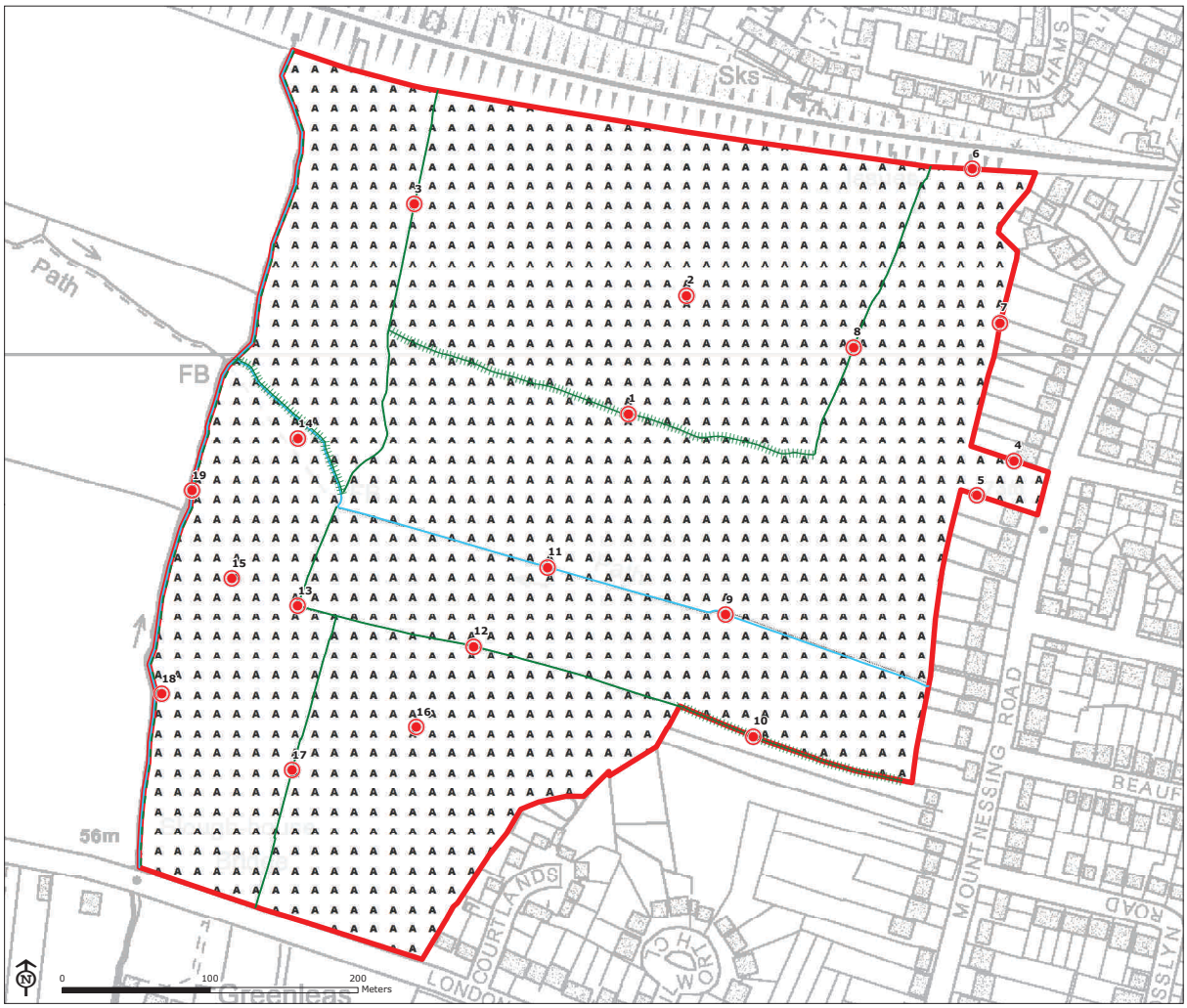
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 11.1: Phase 1 Habitat Survey: Site 8- Land west of Mountnessing Road

- Site Boundary
- Target note
- Running water
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- A Arable

LUC

Map Scale @ A3: 1:2,500

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

12 Site 9: Land east of Tye Common Road & west of Wiggins Lane, Little Burstead (Salmons Farm/Richdan Farm)

Survey Site	9	**Location**	Billericay

Site Overview

The Site is located to the south-west of Billericay and is bordered by Tye Common Road to the west and Little Burstead Golf Course to the east.

The Site largely comprises of agricultural land with smaller areas of improved and poor semi-improved grassland and buildings associated with farms and private properties along Tye Common Road.

Site Photographs

View of field used for grazing in the west

View of arable fields

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

Similarly there are no nationally designated sites within 1km of the Site. The following Local Wildlife Sites were identified within 1km of the site:

Little Burstead Common– Site supports a mosaic of habitats including mixed woodland, grassland and several ponds. Rare species recorded here include long-winged cone-head bush cricket and the hoverfly *Cheilosia griseiventris* (abuts the site in the south);

The Wilderness – Relict ancient woodland with several small ponds supporting populations of notable plant species such as bitter vetch (325m south-east);

Bluntswall Shaws – ancient deciduous woodland (350m north-west);

Botneyhill Wood – ancient deciduous woodland (625m south);

Bluntswall Wood – deciduous ancient woodland (670m north-west);

Frith Wood – ancient deciduous woodland (375m east);

Laindon Common – ancient acid grassland, and also supports populations of a rare arboreal ant *Lasius brunneus* (560m east); and

Little Burstead Wood – Inter-connected chain of three mixed deciduous (potentially ancient) woodland (995m south-east)

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 12.1)

Poor Semi-improved Grassland

Poor semi-improved grassland was recorded in the south of the Site and was primarily used for grazing by horses and cattle. This has resulted in a short sward height with areas of bare ground as a result of poaching. Species included dominant perennial rye grass, abundant creeping buttercup and white clover. A small area directly south of Richdan Farm was left unmown or grazed with has led to a rough grassland with a taller sward height.

Improved Grassland

Improved grassland was located to the north-west of the Site, east of Salmons Farm. Species in the field included dominant perennial rye grass, abundant creeping buttercup and frequent bristly ox-tongue whilst species along the field margin included dominant perennial rye grass.

Semi-Natural Broadleaved Woodland

A small strip of woodland was recorded on the eastern boundary, south of Wiggins Lane. The canopy was dominated by oak whilst the shrub layer was comprised of dominant hawthorn, frequent ash, occasional holly and hazel and the ground layer consisted of dominant ivy and occasional bracken.

Scrub

Dense scrub was found along the boundary of Salmon's Farms field. Species included dominant bramble and blackthorn with tall ruderal vegetation, such as common nettle, creeping thistle and great willowherb.

Hedgerows and Treelines

A network of hedgerows was present throughout the Site. The majority of hedges within the Site were comprised of hawthorn, blackthorn, elm, field maple and bramble with occasional mature oaks. A hedge dominant with conifer was also noted in the south of the Site near to Richdan Farm.

Arable

Arable fields were noted throughout the Site with most fields containing crops whilst the field between Salmon's and Richdan Farm appeared to be reseeded as a grass ley.

Buildings

A number of buildings were identified, associated with farms or private residences.

Other habitats

A mixture of vegetated wet and dry ditches was noted along the boundaries of a number of the arable fields within the Site.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great Crested Newt – there are a small number of waterbodies identified within 500m (as identified from OS base mapping; further investigation would be required) which provide breeding opportunities for GCN, as well as wet ditches on site. The Site provided relatively poor foraging, shelter and overwintering habitat for GCN, with the hedgerow and localised areas of longer grassland, scrub and woodland providing potential terrestrial habitat.
- Badgers – the presence of woodland and open grassland and arable land provides suitable opportunities for foraging and sett building.
- Bats – the Site provides suitable habitat for bats to forage and commute. There are also a number of mature trees that may provide roosting opportunities, as well as buildings
- Birds –nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The larger fields may also support ground nesting species. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development.
- Brown hare – the mosaic of grassland and arable land may be suitable for brown hare to forage and shelter within the Site.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are no Local Wildlife Sites within the Site. However, Little Burstead Common lies directly to the south of the Site and two further LWSs lie just over 300m from the Site boundary. Therefore development has the potential to result in effects on these sites including habitat loss and increased recreation pressure from an increase in local population. Given the distance and lack of ecological connectivity between the Site and remaining LWSs developmnent is unlikely to result in impacts.
Habitats	The habitats identified within the Site are common and widespread, and are of low ecological value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present within relatively localised areas of the site. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk

	of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: GCN may breed within wet ditches on the site and other nearby waterbodies, with potential to use relatively small areas of terrestrial habitat within the Site. Badger sett building along field boundaries and within woodland/scrub. Bats roosting in mature trees and buildings. Nesting birds within hedgerows, scrub and open grassland/arable fields. Brown hare within open grassland/arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, badger, bats, brown hare and birds subject to proposals. More detailed vegetation surveys may also be required subject to development proposals, such as hedgerow surveys.

Avoidance, Mitigation and Enhancement Options

Given the low value of the habitats present on site, development may present the opportunity to enhance the ecological value of the site. This would be achieved through the incorporation of green infrastructure to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats in the wider area.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

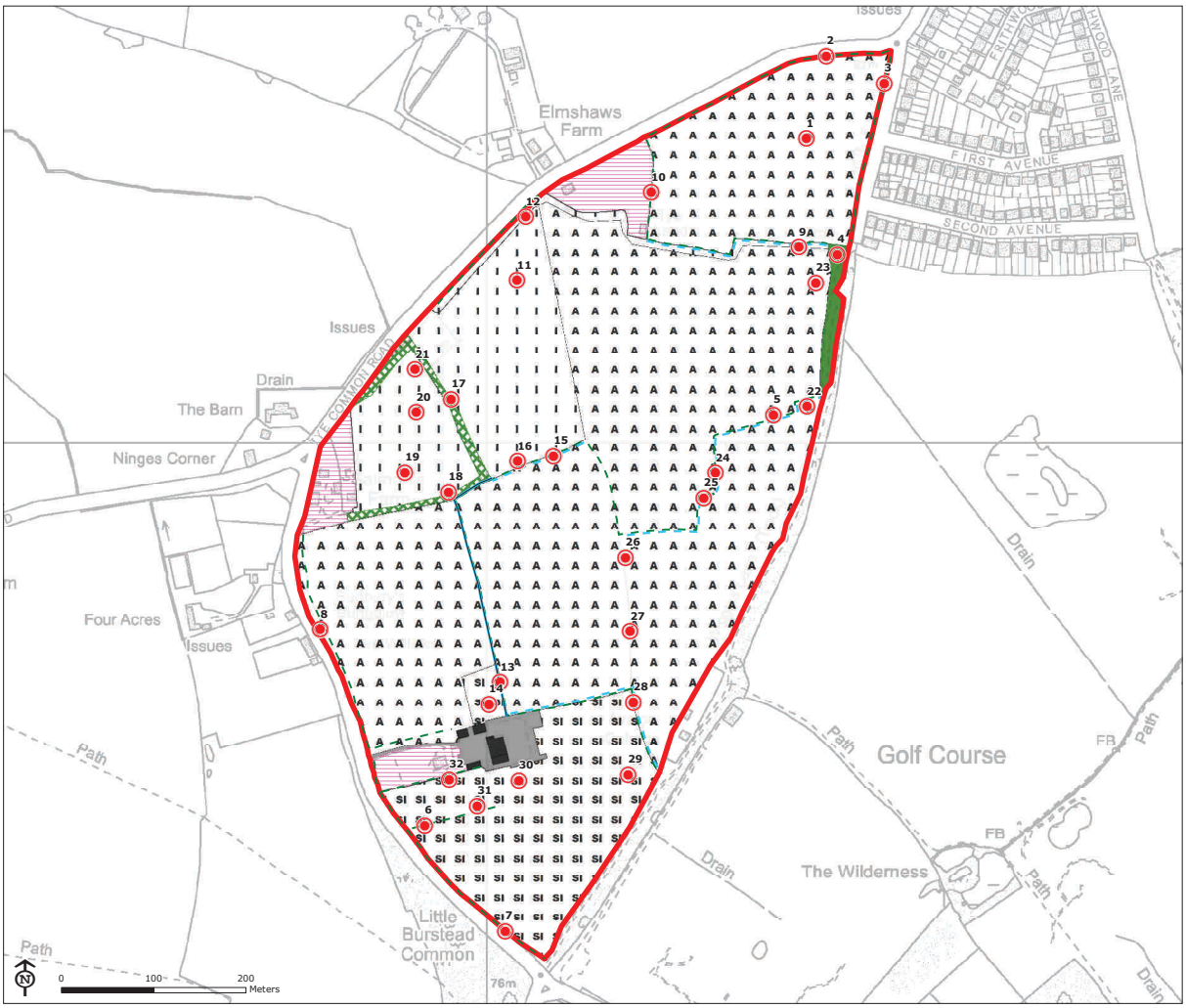
The site was considered to be of low ecological value with minimal constraints to potential development. In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and ditches.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 12.1: Phase 1 Habitat Survey: Site 9- Land east of Tye Common Road and west of Wiggins Lane, Little Burstead

- Site Boundary
- Target note
- Defunct hedge (species-poor)
- Dry ditch
- Wet ditch
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Improved grassland
- Poor semi-improved grassland
- Hardstanding
- Arable
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:4,000

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

13 Site 10: Land North of Tye Common Road, Billericay

Survey Site	10	Location	Billericay

Site Overview

The Site is located to the south-west of Billericay and is bordered by Wiggins Lane to the north-west, Frith Wood LWS to the north-east, Tye Common Road to the south-west and private residences to the south-east.

The Site is entirely comprised of Little Burstead Golf Course and its associated buildings.

Site Photographs

View of a gold green within the golfcourse

View of scrub on the centre of the site

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

No nationally designated sites were identified within 1km of the Site. The following locally designated sites were identified within 1km of the Site:

The Wilderness LWS – Relict ancient woodland with several small ponds supporting populations of notable plant species such as bitter vetch (within the Site);

Laindon Common LWS – ancient acid grassland, and also supports populations of a rare arboreal ant *Lasius brunneus* (abuts the site in the east);

Frith Wood LWS - ancient deciduous woodland (20m east);

Little Burstead Common LWS – Site supports a mosaic of habitats including mixed woodland, grassland and several ponds. Rare species recorded here include long-winged cone-head bush cricket and the hoverfly *Cheilosia griseiventris.* (80m south-west);

Little Burstead Wood LWS –Inter-connected chain of three mixed deciduous (potentially ancient) woodland

(200m south-east);

Botneyhill Wood LWS - ancient deciduous woodland (630m south-west); and

Bluntswall Shaws LWS – ancient deciduous woodland (700m north-east).

Species records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 13.1)

Semi-improved grassland

Semi-improved grassland was noted throughout the site in areas with scattered scrub, forming the 'roughs' between the gold greens/holes. The structure of the grassland varied from unmown, rough grassland to occasionally mown shorter grassland. Species include creeping bent, red fescue, perennial rye grass, couch-grass, vetch *Vicia sp*, creeping buttercup, creeping thistle and cleavers.

Amenity grassland

Amenity grassland was recorded across the site and was primarily used for golf, forming the greens and holes. The grassland is managed intensely, resulting in a short grass structure. Species included creeping bent, red fescue, annual meadow grass, white clover and common dandelion.

Semi-Natural Broadleaved Woodland

Woodland was observed in the south of the site, surrounding a complex of ponds. The canopy was dominated by oak with abundant hornbeam. The shrub layer comprised of dominant blackthorn and bramble, locally frequent holly, and occasional hawthorn, and the ground layer consisted of bare ground and frequent ivy

Scrub

Dense scrub was noted surrounding a pond in the north of the Site and included species such as dominant bramble, abundant willow *sp*, occasional oak and sycamore. A linear stretch of dense scrub was recorded across the site, spanning from the eastern boundary to the woodland in the south. Species included dominant blackthorn, frequent bramble and hawthorn. Dense scrub adjacent to Avalon Cottages surrounded a storage building in the west of the site and included dominant bramble and occasional bracken to the north of the building and dominant hawthorn, abundant crack willow and frequent hazel to the south.

Scattered scrub occurred across the site and consisted of a variety of species, including hornbeam, ash, birch *Betula sp*, gorse, oak, broom, snowberry and blackthorn.

Buildings

Buildings within the site were associated with the Little Burstead Golf Course.

Other Habitats

The site contains a complex of ponds, all of which were surrounded by aquatic vegetation, including common reed and soft rush.

A number of dry and wet ditches were also present within the site. The ditches were largely un-vegetated, as a result of high levels of management.

Fauna

Potential was identified for the following protected species to be present within the Site:

Great Crested Newt – there are a complex of waterbodies identified within the Site and within 500m (as identified from OS base mapping; further investigation would be required) which provide optimal breeding opportunities for GCN. The terrestrial habitats across the Site provides suitable foraging, shelter and overwintering opportunities including rough grassland, woodland and scrub.

Reptiles – the mosaic of rough grassland and scrub through the Site provide suitable conditions for reptiles to forage, shelter and overwinter, as well as connectivity to the wider surrounding suitable habitat.

Bats – the site provides suitable habitat for bats to forage and commute. There are also a number of mature trees within the woodland that may provide roosting opportunities, as well as buildings.

Badger – potential for foraging through the site, and sett building within woodland and scrub habitats.

Birds –nesting birds are likely to be present within the trees and scrub, including species of principle importance and local BAP priorities. However, the used of the golfcourse by ground nesting and wetland/wading birds is considered unlikely given the levels of disturbance from management and golf course users.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present, although the continuity of management and habitat mosaic may increase the potential for such species to be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There is potential for impacts on The Wilderness LWS, which is situated within the boundary of the site, and on Laindon Common LWS, which abuts the Site. Impacts could include habitat loss, contamination (run-off, smothering and dust deposition) and increased levels of visitor pressure due to an increase in the local population.
Habitats	The majority habitats identified within the Site are common and widespread, and are of relatively low ecological value in their own right. However, the habitat mosaic provided across the site as a whole, including wetland habitats, rough grassland with various levels of management and scrub/trees across the site, is likely to be of value to a wide range of wildlife. In addition, ponds are identified as a Priority Habitat within the Essex BAP which could be impacted by habitat loss and contamination associated with development proposals.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present through the site. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: GCN associated with waterbodies and terrestrial habitat.

	Reptiles present within rough grassland, as well as scrub habitats. Bats - roosting in mature trees and buildings, and foraging/commuting through the site. Badger, particularly setts within woodland and scrub habitats Nesting birds in scrub and woodland.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, bats and nesting birds subject to proposals.

Avoidance, Mitigation and Enhancement Options

Given the habitat mosaic and likely value of habitats throughout the site for wildlife, areas of the Site should be excluded from development proposals to ensure that opportunities for wildlife are retained and mitigation can be delivered within the Site. In particular the LWS should be excluded from development proposals (although it may be incorporated within landscape proposals to ensure enhancment and long-term management). In addition, this would alllow creation of accessible natural greenspace as part of the proposals, which may address any impacts associated with increased recreational pressure on retained habitats and LWS's.

Development may also facilitate the enhancment of the wider site, for example through relaxation of management regimes associated with use as a golf course, and additional tree, scrub or hedgerow planting.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats in the wider area and in particular waterbodies, retained habitats and adjacent LWS's.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptile, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds.

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The site is considered to be of moderate ecological value with some constraints to potential development in particular associated with the habitat mosaic and species that this may support, as well as LWS's located within and adjacent to the Site.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

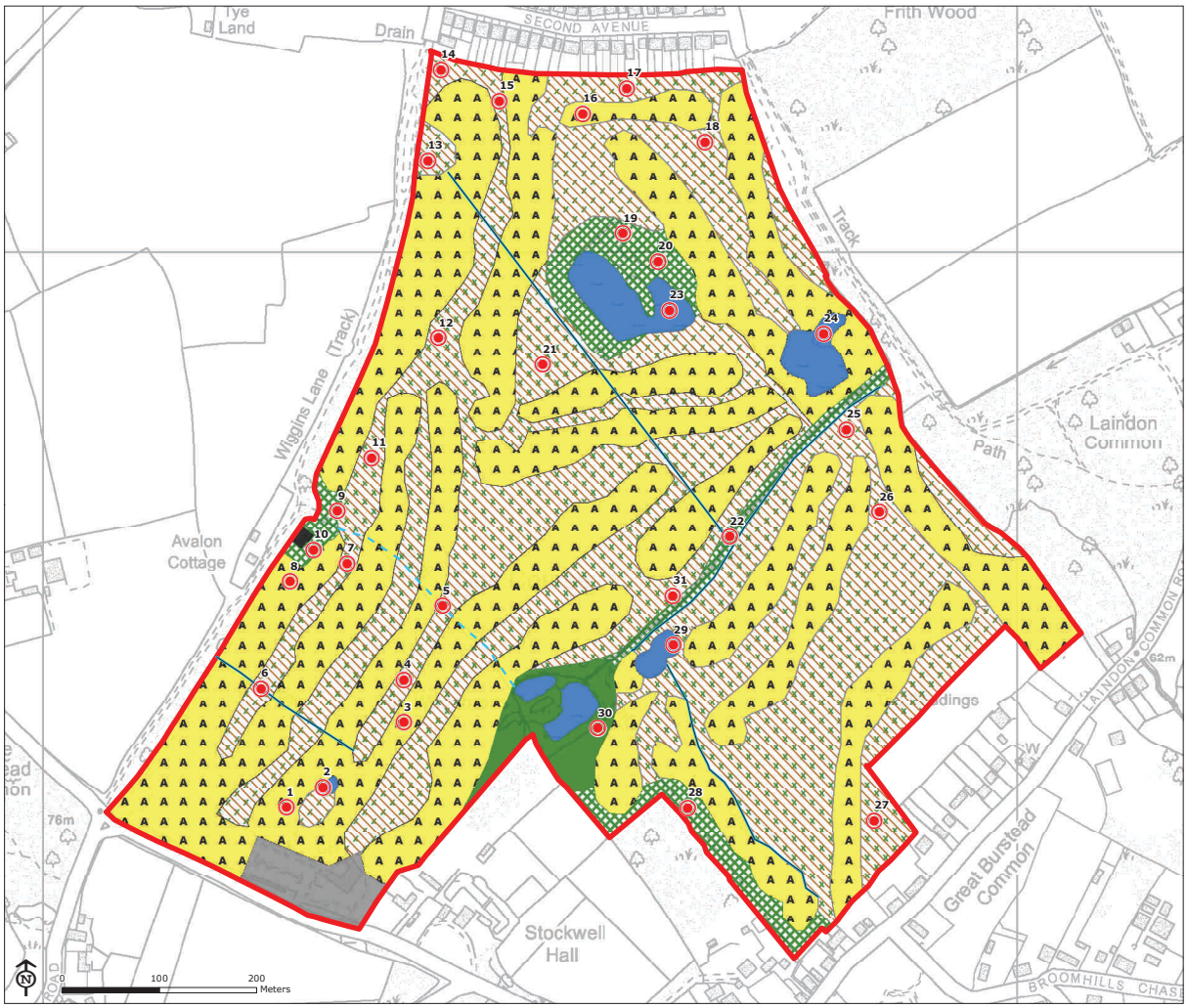
Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain and enhance areas of existing habitat, including to ensure mitigation can be delivered within the Site and to address potential recreation impacts on LWS's.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

Given the relatively small size of The Wilderness LWS, and the potential for this to be enhanced and managed as part of any proposals, it is not considered necessary to exclude this from the potential development area.



Basildon Borough Council Ecology Surveys

Figure 13.1: Phase 1 Habitat Survey: Site 10- Land north of Clockhouse Road/Tye Common Road, east of Wiggins Lane,

- Site Boundary
- Target note
- Dry ditch
- Wet ditch
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Standing water
- Hardstanding
- Amenity grassland
- Buildings

LUC

Map Scale @ A3: 1:3,800

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

14 Site 11: Land between Outwood Farm and Sunnymead

Survey Site	11	Location	Billericay

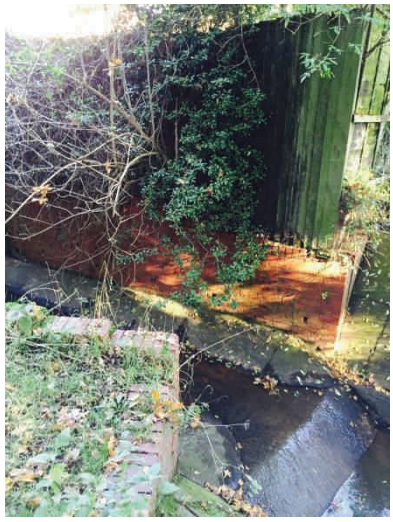
Site Overview

The Site is situated to the east of Billericay and is abutted by residential housing to the north. Private residences are located to the south and agricultural land to the east beyond Outwood Farm Road which comprises the south and east site boundary.

Site Photographs

Field to the north of the stream

View of stream that ran through the centre of the site



Ecological Baseline

Biological Records

Designated Sites

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated sites have been identified within 1km of the Site:

Mill Meadows SSSI – unimproved neutral grassland supporting two red data book invertebrate species (1km west); and

Mill Meadows LNR – designation covers those parts of the site not designated as a SSSI. Supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (1km west).

The following Local Wildlife Sites were identified within 1km of the Site:

Moses Spring Complex – A complex of connected mostly ancient woodlands supporting several UK Priority bird species including lesser spotted woodpecker, bullfinch and song thrush (200m east);

Norsey Meadow - ancient unimproved acid grassland supporting a range of species (730m north);

Parsonage Farm Green – ancient farm lane supporting species rich hedgerows with diverse ground flora (600m east);

Barenleys Farm Meadows – supports lowland dry acid grassland (990m east); and

Devils/Crays Wood – large area of ancient woodland (200m east).

Species Records

No records of protected and/or notable species are identified within the Site.

Habitat Description (see Figure 14.1)

Improved grassland

Improved grassland was recorded along field boundaries in the south west of the site, with perennial rye grass dominant.

Semi-natural broadleaved woodland

Semi-natural broadleaved woodland was located in the south west of the site, adjacent to the residential properties along Outwood Common Road. The woodland was largely composed of semi-mature trees with occasional mature oak trees. The canopy was dominated by semi-mature ash and hazel, with occasional mature oak mature oak trees. The shrub layer included abundant hawthorn, blackthorn and occasional field maple. The ground flora was dominated by ivy, frequent herb-Robert and occasional hedge bindweed.

Scrub

Scattered scrub was noted along the boundary of residential housing located at Outwood Farm Road in the north-east of the Site. The scrub was dominated by bramble with oak saplings.

Tall Ruderal Vegetation

Small areas of tall ruderal vegetation was recorded at various locations around the site, and included species such as common nettle, great willowherb, hogweed, common mallow, red campion and white dead-nettle.

Hedgerows and Treelines

Hedgerows with scattered trees were noted along the boundary of the arable fields throughout the site and along the edge of a stream running through the centre of the Site. Species included bramble, blackthorn, oak, crack willow, ash, Traveller's joy, privet *Ligustrum sp*, field maple and dog rose. All hedgerows were considered to be species rich.

Arable

Arable field were the dominant habitat through the site. The fields supported weedy growth, possibly developed following cropping. Species noted included Italian rye grass, shepherd's-purse, *brassica sp*, *chenopodium sp*, redshank, fat hen *Chenopodium album*, cock's-foot and bristly ox-tongue *Picris echioides*.

Other Habitats

Other habitats recorded within the site, included a dry ditch in the west of the Site, and a stream which flowed through the centre of the site alongside a footpath with vegetated banks.

Small areas of private gardens were present in the east and west of the site.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Dormouse – There is potential for dormouse to be present in the wider vicinity given the presence of woodlands and hedgerows, however the habitats on site were considered sub-optimal given the small size of the woodland and relatively low density of the hedgerow network. It is therefore considered unlikely that this species would be present on the site.
- Badger – evidence of a badger sett, latrine and footprints were noted within the Site. The open arable habitat along with the semi-natural broadleaved woodland and hedgerow provides optimal

habitat for badgers.

- Bats – there is potential for bats to forage and commute across the Site using hedgerows. There is also potential for bats to roost in mature trees within the Site, although the number of mature trees was relatively low, as well as within buildings.
- Water vole – there is relatively low potential for water vole to present along the stream given its relative isolation from other waterbodies, however presence cannot be ruled out.
- Birds –nesting birds are likely to be present within the hedgerows, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Arable fields (dependent on crops) may support ground nesting species including skylark and grey partridge. Use of the fields by wetland/wading birds is considered unlikely given the relatively small size of the fields and vicinity to the settlement and associated disturbance.

It is unlikely that GCN will be present due to the lack of suitable water bodies within 500m of the Site (as identified from OS base mapping; further investigation would be required).

Brown hare are unlikely to be present given the nature of the fields and their relative isolation by roads. Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate, such as the shrill carder bee would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	No internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Two LNRs are identified in the local vicinity although given the presence of intervening habitats it is considered unlikely that development proposals would significantly affect these sites. There are also no Local Wildlife Sites present within the site. However several LWSs are located within the vicinity. Given the presence of intervening habitats it is considered unlikely that development proposals would significantly affect these sites.
Habitats	The habitats recorded are common and widespread and have relatively low intrinsic value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, with occasional hedgerows identified on site which may be species-rich. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Lowland mixed deciduous woodland is also listed as a Habitats of Principal Importance in England, although the area of woodland within the site is of relatively low value comprising a small area of semi-mature woodland.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows and woodland habitats likely to be of highest value to a range of species. The arable habitats are likely to be of lower value for species; however there is some potential for species such as farmland/ground nesting birds to be using these habitats for nesting and shelter. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation

	by pets. Key potential constraints within the Site include: Potential for badger setts along field boundaries, within hedgerows, scrub and woodland, and foraging through the site. Bats roosting in mature trees and buildings, and foraging and commuting along hedgerows through the site. Low potential for water vole associated with the stream. Nesting birds within hedgerows, trees, scrub and woodland, and ground nesting birds associated with arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for badger, bats, water vole and birds subject to proposals. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be proposed.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect woodland and hedgerows within the site, and ensure that connectivity to the wider area is maintained. Although, the site has a low ecological value, the development proposal should aim to enhance remaining habitats or create new habitats to address habitat loss, potentially including wetland creation to complement/enhance the existing stream.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats of value within the site. This would also ensure no impacts on nearby LWS's.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The majority of the site is considered to be of low ecological value with the hedgerows and stream of greatest value given the habitat these provide and contribution to habitat connectivity.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts, and possibly delivering an enhancement, on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows, and through protection and enhancement of the stream.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

Basildon Borough Council Ecology Surveys

Figure 14.1: Phase 1 Habitat Survey: Site 11- Land between Outwood Farm Road and Sunnymede, Billericay

- Site Boundary
- Target note
- Running water
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Dry ditch
- Tree line
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Scrub (scattered)
- Scrub (scattered)/Other tall herb and fern (ruderal)
- Improved grassland
- Standing water
- Arable
- Private residence

LUC

Map Scale @ A3: 1:3,100

15 Site 12: Land East of Tyefields, South of burnt Mills Road, Basildon

Survey Site	Site 12	**Location**	Basildon

Site Overview

The Site is located to the east of Pitsea, Basildon. The Site is abutted to the north by Burnt Mills Road, in the east by The North Benfleet Plotlands, and by Tyefields in the west. To the south of the Site is further agricultural land.

The Site comprises a mosaic of arable and pastoral agricultural land, public open space, sports pitches and areas of informal grazing.

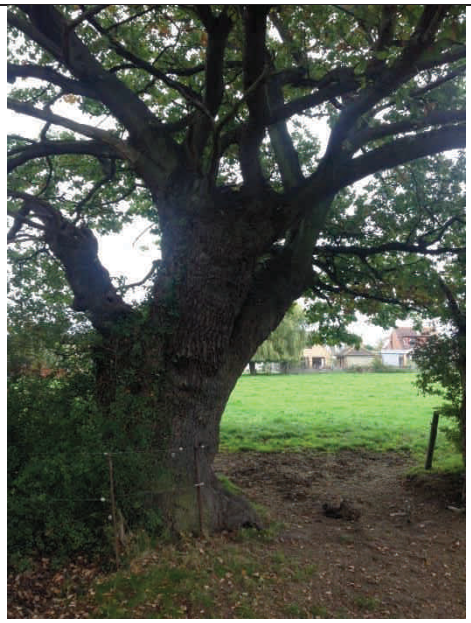
Site Photographs

Semi-improved grassland in the north-east of the Site

Pond within the north of the Site

Woodland in the west of the Site

Potential veteran tree near Little Chalvedon Hall



Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. Similarly no nationally designated sites have been identified within 1km of the Site boundary.

The following Local Wildlife Sites have been identified within 1km of the Site boundary:

Burnt Mills – open mosaic habitats on previously built land, important invertebrate assemblage, good mix of wetland species (530m north-west);

Bowers Gifford Grassland – species rich lowland meadow supporting populations of hairy vetchling and diverse invertebrate interest.(760m south);

Nevendon Bushes LWS – ancient woodland, ponds supporting great crested newt and grassland (800m west); and

Rushbottom Lane Flood Pond – supports marshy grassland (Rare in Essex) and several County rarities including black sedge (900m east).

Species records

No records of protected or notable species were identified within the Site boundary.

Habitat Description (see Figure 15.1)

Improved Grassland

Improved grassland was the most abundant habitat within the Site. It was recorded throughout the south of the Site, along the eastern Site boundary, within a small area in the north-west of the Site, and within open space in the west of the Site.

In the south it was dominated by species such as perennial rye-grass, Italian rye-grass and cock's-foot, with species such as creeping buttercup and white clover abundant to frequent. In the south-east of the Site the grassland was grazed by cattle and had a short length however further west the sward became longer with a slightly thatched structure.

Improved grassland recorded in a band along the eastern Site boundary was dominated by species such as perennial rye-grass, common couch and Yorkshire fog and was used as informal recreational space (mainly by dog-walkers).

In the north-west of the Site, the grassland formed part of a public open space (Felmore Park East) and was again dominated by perennial rye-grass with abundant white clover and meadow buttercup, and frequent greater plantain.

Semi-improved Neutral Grassland

Semi-improved neutral grassland was noted in a small field in the north-east of the Site. The grassland had been recently cut for hay, however to the east of this area the grassland became longer and with a dense structure. It was dominated by cock's-foot, with abundant false oat-grass, crested dog's-tail and frequent common fleabane. Ragwort was frequent to locally abundant. Meadow buttercup and white clover were occasional, and vetch sp., tufted hair-grass, cotoneaster sp., field bindweed, bristly ox-tongue, common nettle, teasel, creeping cinquefoil and red clover were all present but rare.

Amenity Grassland

Amenity grassland was noted in the south-west of the Site in the form of playing fields and within the football ground. Small areas of amenity grassland were also associated with a small play park near the western Site boundary, and with a nursery in the north-east of the Site.

Semi-natural Broadleaved Woodland

Semi-natural broadleaved woodland was recorded in the west of the Site, both to the south and north of Trenham avenue. The canopy was dominated by oak with occasional sycamore and silver birch which was present but rare. The shrub layer included abundant hawthorn and blackthorn and the ground layer was sparse but included grassland species as described above in the more open glades.

A small band of semi-natural broadleaved woodland was also noted in the north-east of the Site where it was dominated by sycamore with occasional oak, silver birch and bird cherry. The dense shrub layer was dominated by hawthorn and blackthorn and ground flora was absent.

Dense Scrub (with Scattered Trees)

Dense scrub was noted in a large area in the north of the Site where it was dominated by hawthorn and blackthorn. Further south (to the north of an abandoned playing field) the scrub comprised similar species and scattered oak trees were also present. In the south-west of the Site, adjacent to the football ground, the scrub was also dominated by hawthorn and blackthorn, and scattered trees included ash, oak, cherry *Prunus sp*and apple *Malus sp*.

Hedgerows and Treelines

Hedgerows throughout the Site were species poor, including those which were defunct, and included a mixture of hawthorn, blackthorn and elm. Mature oak trees were also noted throughout the majority of hedgerows, some of which were potentially veteran trees. A treeline comprising semi-mature elm was also noted to the north of an arable field in the central part of the Site.

Arable

Several arable fields were noted in the central part of the Site. These had been recently ploughed and drilled and did not support any vegetation at the time of survey. In the centre of the southern-most field a group of trees surrounded a potential ephemeral pond, however this was dry at the time of survey.

Ponds

In the north of the Site, within the Felmore Park East area of open space, the pond was large and supported a greater diversity of vegetation including Australian swamp stonecrop, which was locally dominant around the edges of the pond. Other bank vegetation included locally frequent ornamental grasses, locally frequent vetch sp. and bullrush *Schoenoplectus*, occasional false fox sedge, hard rush and soft rush, and water mint which was present but rare. Aquatic vegetation included locally abundant broadleaved pondweed and Australian swamp stonecrop. Yellow flag iris and curled pond weed were present but rare.

A further pond was recorded in the north east of the site, however access was not available at the time of the survey.

In the centre of the Site within an arable field, a potential ephemeral pond was noted. It was surrounded by hawthorn scrub and was dry at the time of survey. A further potential ephemeral pond was noted in the south-east of the Site, close to Little Chalvedon Hall. The pond was dry and bordered by mature crack willows.

Hardstanding and Buildings

Hardstanding was noted in the north-east of the Site associated with the nursery car park, and in the south-west of the Site where it formed the car parks of the football ground.

Buildings within the Site included farm buildings associated with Little Chalvedon Hall in the south-east of the Site, the football ground in the south-west, and several private residences in the east and west of the Site, and along the northern Site boundary. A pill box was also noted within a hedgerow in the central part of the Site.

Fauna

Potential was identified for the following protected species within the Site:

Great crested newt – Grassland, hedgerows, scrub and woodland habitats throughout the Site provides suitable terrestrial habitat for this species, including for foraging, shelter and hibernation. Potential aquatic breeding habitat for this species was noted, with a number of ponds recorded within the site and in the surrounding area.

Reptiles – There is the potential for reptiles to be present within longer grasslands within the Site. In particular, an abandoned playing field in the west of the Site, and an area of semi-improved grassland in the north-east of the Site supported long densely structured grassland suitable for common species such as slow worm and common lizard. Improved grassland in the east of the site had similar potential. Grassland in the north and south of the site was shorter and therefore less suitable, however should the grass be allowed to reach a longer length it could become suitable.

Badger – The site provides suitable habitat for badger, both in terms of foraging and sett building. A mixture of arable and grassland provides suitable foraging areas, whilst woodland, scrub and hedgerow habitats provide suitable opportunities for sett building as well as foraging habitat.

Bats – The Site provide suitable roosting habitat for bats within trees both in the woodland and in the field boundaries (hedgerows and mature treelines), whilst buildings may also support bat roosting opportunities. Hedgerows and treelines within the Site also provide suitable commuting routes for bats, whilst the woodland, grassland and waterbodies provide foraging opportunities.

Birds – nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. However, the use of fields and grassland habitats by ground nesting birds and wetland/wading birds is considered unlikely given the relatively small size of these hfields and surrounding hedgeriow/treed habitats, as well as levels of disturbance and the relatively urban nature of the Site.

It is considered unlikely that water vole or otter would be present within the Site given the lack of suitable habitat for these species. Similarly it is considered unlikely that dormouse would be present within the Site given the relatively urban nature of the Site, and the lack of connectivity with larger areas of suitable woodland habitat. It is unlikely that notable invertebrates such as the shrill carder bee would be present within the Site given the lack of flower-rich habitat for foraging within the Site. It is also considered unlikely that brown hare or ground nesting birds would be present within the Site given the relatively high levels of recreational disturbance from dog walkers in suitable habitat areas. The invasive species Australian swamp stonecrop was noted within and on the banks of a pond within the park in the north of the Site.	
Ecological Valuation	
Designated Sites	No nationally or internationally designated sites are present within or adjacent to the Site. No Local Wildlife Sites (LWS) are present within the Site, with four sites are located within 1km as discussed above in the Biological Records section. It is considered unlikely that proposals would affect these sites given their distance and lack of ecological connectivity with the Site.
Habitats	Overall the habitats present on the site are of relatively low value in their own right, with the central and south east parts of the site being of reduced value. However the habitat mosaic on the site, and in particular the northern part of the site, was likely to provide opportunities for a wide range of wildlife. Woodlands and mature and potential veteran trees provide opportunities for a variety of wildlife and should be protected where possible, with woodlands also potentially qualifying as Habitats of Principle Importance in England. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Ponds are also identified as Essex Biodiversity Action Plan Priority Habitat and could be affected by habitat loss as well as contamination during works. Any retained habitats may also be subject to increased recreational pressure, and associated 'urban' effects such as flytipping and vandalism.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected species within the Site. However there is potential for such species to be present throughout much of the Site, with hedgerows and woodland habitats likely to be of highest value to a wide range of species. The grassland and arable habitats are of lower value for protected species, however there is some potential for species such as reptiles to be using these habitats for shelter, particularly where the grass has developed a longer structure. The potential for such species to be present across the Site would increase should the field margins and other grassland areas develop a longer structure). Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: Potential presence of reptile within grassland areas in particular, with potential for GCN to breed within waterbodies within and adjacent to the site and to

	foarge or shelter through the site; Badgers, particularly the presence of setts associated with and field boundaries; Bats may roost within mature trees and buildings. Bats may also use linear habitats for foraging and commuting with fragmentation and habitat loss potentially affecting these species. Nesting birds could also be affected by any removal of hedgerows, scrub or trees.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, bats and birds subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, in particular hedgerow surveys.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain woodland, hedgerows and mature trees where possible, ideally focussing on improved grassland and arable habitats. To adequately deliver mitigation it would be necessary to retain and enhance areas of the site as open space within any proposals (for example, the northern part of the site including the existing park which supported a relatively diverse habitat mosaic). This would help mitigate impacts associated with increased recreational pressure, with other options including fencing or native scrub planting along woodland edges to deter access, and control of invasive species.

Best practice construction methods should be also followed to protect retained habitats from runoff, smothering and dust deposition and root compaction, as detailed within a Construction Environment Management Plan or similar.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDS, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats;

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The northern part of the Site was particularly diverse and included existing open space, whilst the central and south eastern parts of the site were of reduced value being dominated by improved grassland and

arable habitats.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

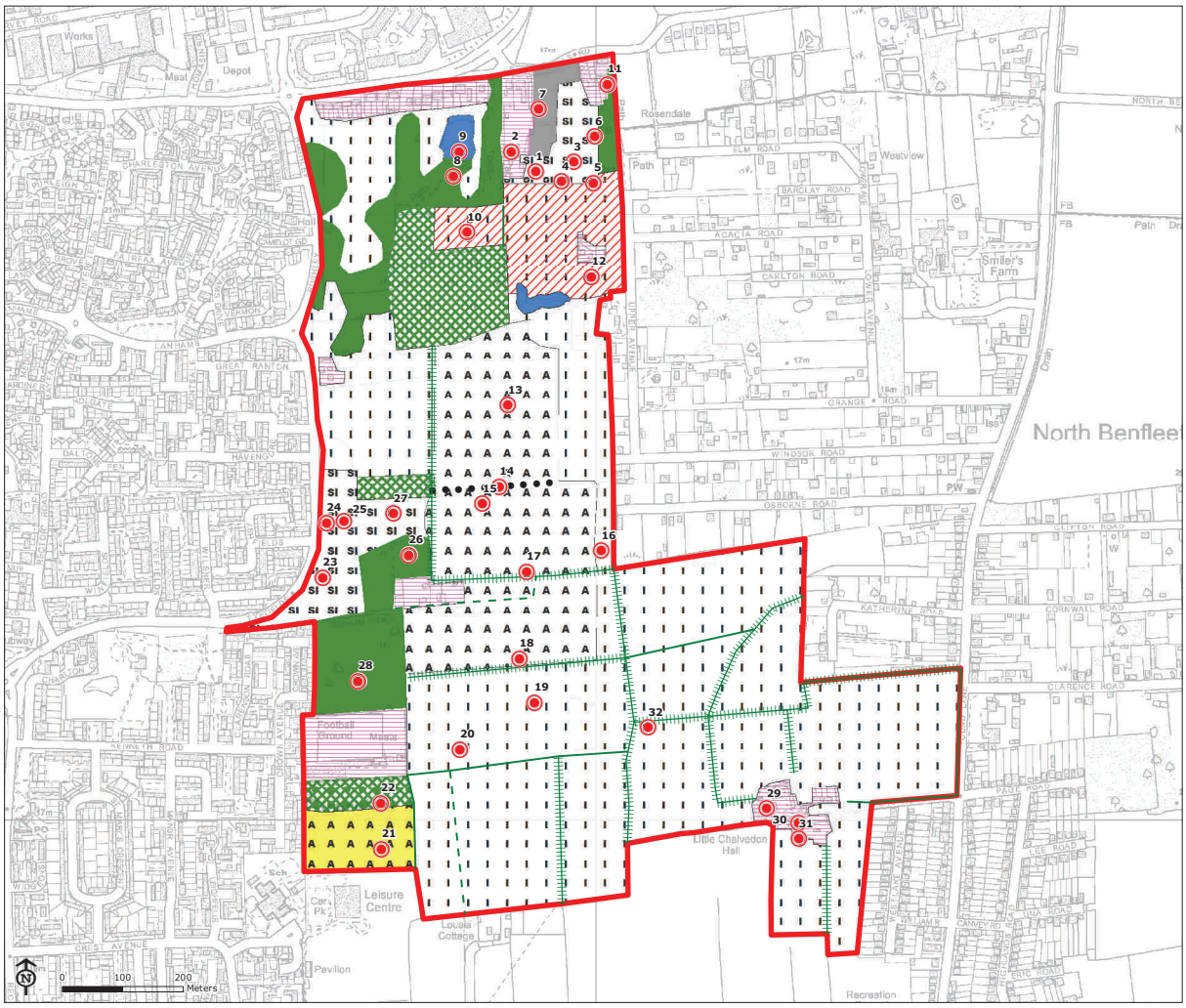
Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows, trees and woodland.

Areas of habitat are retained and enhanced to ensure adequate mitigation can be delivered for those areas lost, for example with areas of greatest habitat diversity retained such as the northern part of the site and the existing open space.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 15.1: Phase 1 Habitat Survey: Site 12- Land east of Tyefields, south of Burnt Mills Road, Basildon

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Tree line
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Scrub(dense/continuous)/ Broadleaved scattered trees
- Improved grassland (no direct access)
- Improved grassland
- Poor semi-improved grassland
- Standing water
- Hardstanding
- Arable
- Amenity grassland
- Private residence

LUC

Map Scale @ A3: 1:6,100

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

16 Site 13: Land North of London Road, East of Ilfracombe Avenue, Basildon

Survey Site	13	Location	Basildon

Site Overview

The Site is situated to the east of Basildon and is abutted by residential housing to the east and west, with agricultural land to the north and the B1464 and A13 immediately to the south.

The site is dominated by agricultural grassland, with large areas of residential and associated development.

Site Photographs

View of grassland to the east

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated site is located within 1km:

Pitsea Marshes SSSI – mosaic of habitats supporting a rich flora and fauna including the nationally scarce stiff saltmarsh grass and several nationally scarce invertebrates (820m south).

There are no Local Wildlife Sites within the site itself. The following LWSs have been identified within 1km of the Site:

Bowers Gifford Grassland LWS – species rich lowland meadow supporting populations of hairy vetchling and

diverse invertebrate interest.(170m south);

Pitsea Mount LWS– area of flower-rich grassland supporting an important invertebrate assemblage including the brown-banded carder bee and the digger wasp *Crossocerus binotatus* (700m south-west)

"Untidy industries" LWS – post-industrial brownfield site supporting nine nationally threatened and 41 nationally scarce species including brown-banded carder bee and the shrill carder bee (850m south-west)

Bowers Marshes LWS – supports a mosaic of habitats including grazing marsh and wet drains. Supports a rich flora and fauna including the nationally scarce stiff saltmarsh grass and several nationally scarce invertebrates (785m south);

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 16.1)

Semi-improved grassland

A large are of semi-improved grassland was recorded east of Ilfracombe Road. The grassland was managed, resulting in a short, even sward and was used informally by local dog walkers. Species present included perennial rye grass, cock's-foot, vetch *Vicia sp*, white clover, Yorkshire fog, red clover, red fescue and bristly ox-tongue. A smaller area of semi-improved grassland was noted south of the recreational ground and was an area of overgrown disused land. Species included dominant perennial rye grass, abundant creeping buttercup, dock *Rumex sp* and white clover, frequent bristly ox-tongue, ox-eye daisy and red clover, and occasional creeping thistle and goat's rue.

Poor semi-improved grassland

Poor semi-improved grassland was noted to the east of the recreation ground and west of Eversley Road. The fields were used for horses paddocks that were grazed to a short sward height with small patches of tall ruderal vegetation. The fields comprised of the species, such as perennial rye grass, white clover, creeping buttercup, dandelion, crested dog's tail, smaller cat's-tail, Yorkshire fog, common nettle and greater plantain.

Improved grassland

Improved grassland recorded in the north of the site, adjacent to Eversley Road was primarily used as horse paddocks. The grass was of a short height but not heavily grazed. Species included perennial rye grass, white clover, creeping buttercup and ragwort.

Amenity grassland

Amenity grassland was situated along the western boundary of the site and was used as a recreation ground. Species present included dominant perennial rye grass, abundant white clover, and frequent dandelion and smaller cat's-tail.

Scrub

Scrub was found in small patches within the site and included species, such as bramble, blackthorn, hawthorn, snowberry, elder and elm. This included linear strips (assumed outgrown hedgerows) within the area of semi-improved grassland.

Tall Ruderal Vegetation

Tall ruderal vegetation with scattered bramble was also recorded immediately north of London Road in the south and small areas with scrub. Species included *Chenopodium sp*, creeping thistle, soft rush and great willowherb.

Hedgerows and Treelines

A network of hedgerows were found throughout the site along boundaries of fields and the recreational ground. Similar species were noted in all the hedges and included the following species; blackthorn,

hawthorn, elm, bramble, ash and oak.

Buildings

Buildings within the site were predominantly private residences. There were also buildings associated with a leisure centre and works yards.

Other habitats

Bare ground was noted in the north of the site adjacent to a horse ménage.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great Crested Newt – A small number of ponds were identified within 500m of the Site (as identified from OS base mapping; further investigation would be required) and therefore there is the potential for GCN to use terrestrial habitats on Site. Terrestrial habitat, such as hedgerows, scrub and rough grassland may provide suitable habitat.
- Reptiles – the rough grassland and tall ruderal habitats, particularly those adjacent to scrub and hedgerow habitats which would provide additional sheltyer, may provide suitable forage and sheltering opportunities for reptile species, although many areas of grassland were relatively frequently managed reducing their suitability.
- Bats – Buildings may provide suitable roosting opportunities whilst hedgerows, scrub and associated grassland habitats may provide foraging and commuting habitats for bats. However, overall the site was considered to provide habitat of relatively low value for foraging bats.

Birds - nesting birds are likely to be present within the hedgerows, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Grassland areas were mostly considered unlikely to support ground nesting species given recreational disturbance and management, although use by these species cannot be ruled out in less disturbed areas. Use of the fields by wetland/wading birds is considered unlikely given the vicinity to the settlement and associated disturbance.

Brown hare – there is potential for brown hare to be present within the site due to the large area of open grassland, however due to the management of the grassland and regularly disturbance from dog walkers is likely to reduce the suitability for this species.

Badger – the site provides potential foraging habitat for badger, including grassland, scrub and hedgerows, with hedgerows and scrub also providing habitat suitable for sett building.

Given the relatively poor structural and species diversity across the site, it is considered unlikely to of particular value for invertebrate species.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	No nationally/internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are no Local Wildlife Sites present within the site and all LWS and SSSI in close proximity to the site are disconnected from the site by residential development and roads. It is therefore, unlikely for there to be significant impacts from development.
Habitats	The habitats recorded are common and widespread and have relatively low intrinsic value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site

	appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows and woodland habitats likely to be of highest value to a range of species. The arable habitats are likely to be of lower value for species; however there is some potential for species such as farmland/ground nesting birds to be using these habitats for nesting and shelter. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: Low potential for GCN and reptiles to be associated with rough grassland and associated scrub and hedgerows. Bats roosting in buildings, and foraging and commuting through the site. Nesting birds within hedgerows, trees, scrub and woodland, and ground nesting birds and brown hare associated with open grassland fields. Badger setts and foraging through the Site

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, bats, badger and birds subject to proposals.

Avoidance, Mitigation and Enhancement Options

The site is generally considered to be of low ecological value, however proposals should seek to maintain connectivity through the protecting of hedgerows. The development proposal should aim to enhance remaining habitats or create new habitats to address habitat loss. This should be incorporated into the development through green infrastructure.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats of value within the site.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptile, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to

widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

Overall the Site is considered to be of low ecological value with the hedgerows of greatest value given the habitat these provide and contribution to habitat connectivity.

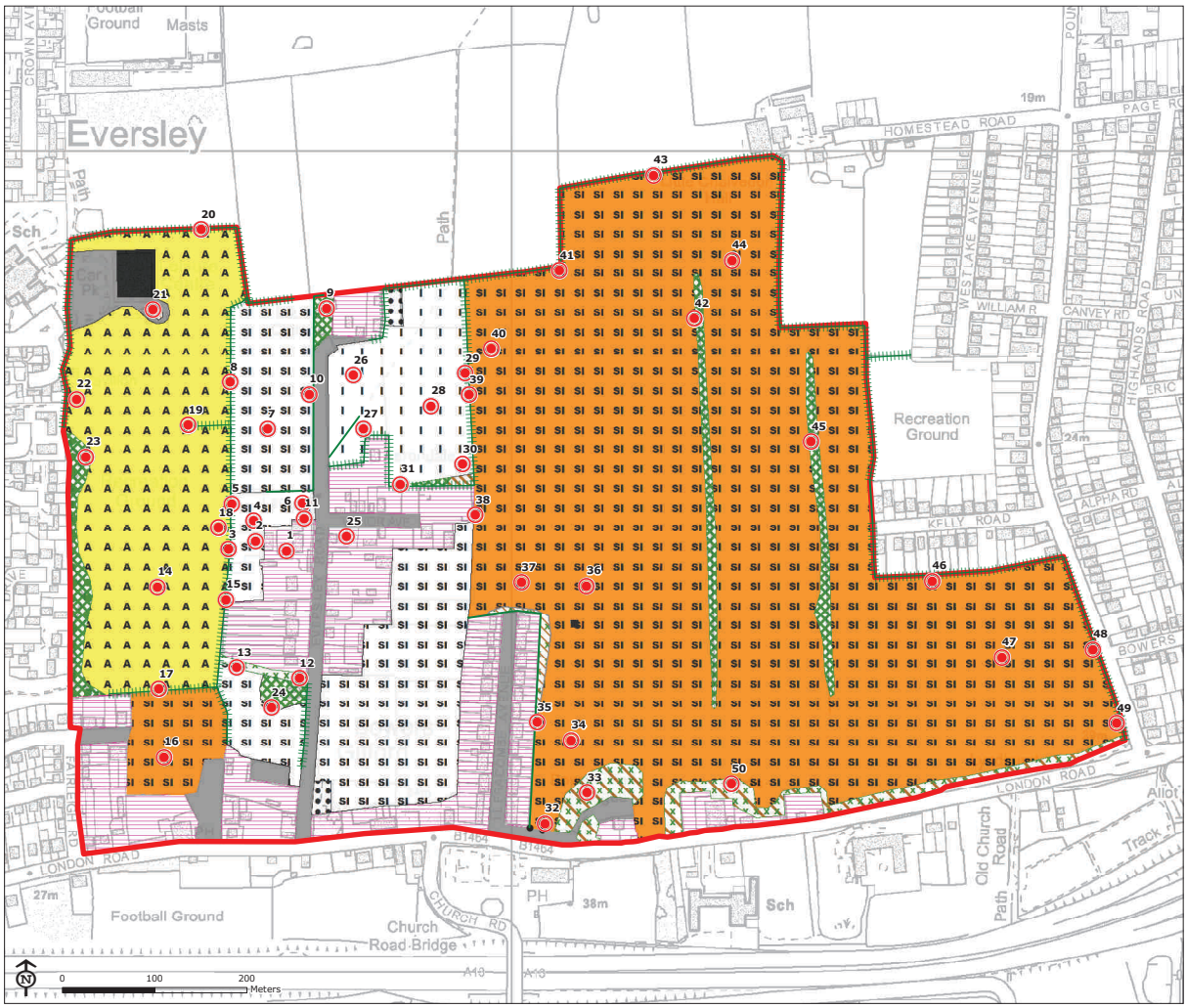
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts, and possibly delivering an enhancement, on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 21/12/2015

Basildon Borough Council Ecology Surveys

Figure 16.1: Phase 1 Habitat Survey: Site 13- Land North of London Road, East of Ilfracombe Avenue and West of Pound

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Hedge with trees (species-poor)
- Tree line
- Scrub (dense/continuous)
- Scrub(dense/continuous)/ Broadleaved scattered trees
- Scrub (scattered)
- Scrub (scattered)/Other tall herb and fern (ruderal)
- Neutral grassland (semi-improved)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Improved grassland
- Poor semi-improved grassland
- Other tall herb and fern (ruderal)
- Hardstanding
- Amenity grassland
- Introduced shrub
- Buildings
- Bare ground
- Private residence

LUC

Map Scale @ A3: 1:4,000

17 Site 14: Land West of Wickford, North of London Road and South of the River Crouch, Basildon

Survey Site	14	**Location**	Wickford

Site Overview

The Site is situated to the west of Wickford and was abutted by the River Crouch to the north, London Road to the south, residential development to the east and agricultural land to the west.

The Site comprises of a variety of land uses, including a garden centre, cattle grazing, dog kennels, private land and a recreational ground.

Site Photograph

View of field to the east, adjacent to the garden centre

View of grassland in the centre of the site

View of pond in the centre of the site to the north

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. Similarly there are no nationally designated sites within 1km.

There are no Local Wildlife Sites within the site itself. The following locally designated sites were identified within 1km:

Wickford Riverside LWS - species-rich lowland meadow providing important invertebrate foraging habitat (620m north-east).

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 17.1)

Semi-improved grassland

Semi-improved grassland was to the east of the site, with varied management resulting in varied structural characteristics. The land furthest east was used for cattle grazing and was noted to be of a short sward height with areas of bare poached ground, and areas previously burnt supporting patches of tall ruderal vegetation. Species comprised of dominant perennial rye grass, abundant bent-grass *Agrostis sp*, locally abundant red dead-nettle, frequent creeping buttercup, crested dog's tail and Timothy, locally frequent common nettle, and occasional cock's-foot and white clover.

The central area of the semi-improved grassland was associated with a dog kennels and was regularly mown to a short height. Species included dominant perennial rye grass, abundant common daisy, frequent creeping buttercup, white clover, occasional red dead-nettle, bristly ox-tongue, creeping thistle and rare ragwort.

The western area was regularly mown in places with small patches of a rough grassland and included species, such as bent-grass *Agrostis sp*, false-oat grass, white clover, dock *Rumex sp*, smaller cat's-tail, bristly ox-tongue and vetch *Vicia sp*.

Poor semi-improved grassland

Poor semi-improved grassland was recorded east and west of Woolshotts Road, and to the east of Newhouse Avenue. Poor semi-improved grassland to the east of Sudgen Road was part of a private residences and was relatively regularly mown. Species included dominant perennial rye grass, abundant white clover and frequent creeping buttercup. Poor semi-improved grassland to the west of Sudgen Road was a field, ungrazed at the time of survey. The grassland was short and included species, such as dominant perennial rye grass, abundant cock's-foot, frequent bristly ox-tongue and occasional dandelion. Similarly, the small field to the east of Newhouse Avenue was unused, but had a relatively short sward height with coarser species, such as abundant dock *Rumex sp*, locally abundant creeping buttercup, and frequent tufted hair grass and white clover.

Amenity grassland

Amenity grassland was associated with the children's playground to the north of Sudgen Road. Species included dominant perennial rye grass, abundant white clover, locally abundant yarrow and frequent dandelion.

Scrub

Dense scrub was noted in small areas within the site. The scrub was mainly comprised of bramble, blackthorn, hawthorn, dogwood and elder with mature oaks and crack willow.

Scattered scrub in the north-east of the site was dominated by bramble.

Tall Ruderal Vegetation

Tall ruderal vegetation was recorded in areas of disturbed, unused land and alongside the River Crouch.

Species present included common nettle, bramble, cleaver, red dead-nettle, great willowherb, dock *Rumex sp* and teasel.

Hedgerows and Treelines

A small number of hedgerows and treelines were present along the boundaries of individual parcels of land. Hedgerows were comprised of blackthorn, hawthorn and bramble, whilst some hedgerows and treelines associated with private residences were found to include conifer species instead.

Two clusters of scattered trees were noted to the east of the Site. The cluster to the north was dominated by sycamore; the cluster to the south by field maple.

Buildings

Buildings within the site were associated with private residences and local business, such as the dog kennels and the garden centre. An electrical power station was also identified to the east of the children's playground.

Two vegetated ponds were recorded in the eastern part of the site, with the River Crouch forming the northern site boundary.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great Crested Newt – the two ponds on the site provide breeding opportunities for GCN (as well as others in the vicinity), whilst the rough grassland, scrub, ruderal and hedgerow habitats provide optimal terrestrial habitat for GCN including foraging, sheltering and overwintering opportunities.
- Reptiles – the habitat mosaic as described above would provide optimal conditions for reptiles including foraging, sheltering and overwintering opportunities.
- Bats – mature trees and buildings may provide suitable roosting opportunities, whilst the network of habitats across the site, in particular in the east, would provide optimal foraging habitat. The River Crouch also provides optimal forsaging habitat, as well as connectiovity to the wider landscape.

Otter and water vole–the River Crouch runs adjacent to the site. There is potential for the river to be used by otter as a movement corridor, with adjacent scrub habitats providing sheltering opportunities. Similarly water vole may be present within the River Crouch, although the section of river in the vicinity of the Site is largely overshaded thereby reducing it's suitability for this species.

Birds - nesting birds are likely to be present within the scrub, hedgerows and trees including priority species such as sing thrush and farmland birds. However due the small size of the fields and the high level of disturbance from land management and the urban nature of the Site, it is unlikely for the site to support ground nesting species or wetland/wading birds.

Although the habitats present are considered suitable for badger, the relative isolation of the site reduces the likelihood of presence. However, presence cannot be ruled out at this stage.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	No nationally/internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are no Local Wildlife Sites present within the site. There is however potential for off site impacts including contamination (run-off, smothering and dust deposition) to affect the River Crouch and nearby Wickford Riverside LWS.
Habitats	The habitats recorded are common and widespread and have relatively low intrinsic value. However, the mosaic of habitats provided across the site, and in particular in the east of the Site, is likely to be of value to a wide range of

	wildlife. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. The River Crouch along the northern boundary of the site, also provides a valuable ecological corridor, and is vulnerable to contamination as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with more species-rich grassland areas, hedgerows, scrub, ponds and the river corridor likely to be of highest value to a range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: Potential for GCN to be breeding within ponds, and GCN and reptiles to be using terrestrial habitats throughout the Site. Bats roosting in buildings, and foraging and commuting through the site. Otter utilising the river and associated habitat. Nesting birds within hedgerows, trees and scrub.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, bats, otters and birds subject to proposals. Detailed vegetation surveys may also be required, for example hedgerow surveys.

Avoidance, Mitigation and Enhancement Options

The site habitat mosaic provied across the Site, and in particular in the east of the Site, is likely to provide opportunities for a range of wildlife. Areas of habitat should therefore be retained within any development to minimise ecological impacts whilst enhancment of these habitats the Site to address impacts asspociated with habitat loss. Ideally, the mosaic of grassland, waterbodies and scrub in the east of the Site would be reatined, with development focused in more species poor grassland habitats in the west.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats of value within the site, in particular the River Crouch and associated habitats, and associated LWS's.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptile, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE

licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Maintenance of a buffer alongside of riparian habitats to avoid impacts on otter;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The Site supports a diverse habitat mosaic likely to be of value to a range of wildlife, with particular value associated with the east of the site and the River Crouch corridor.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

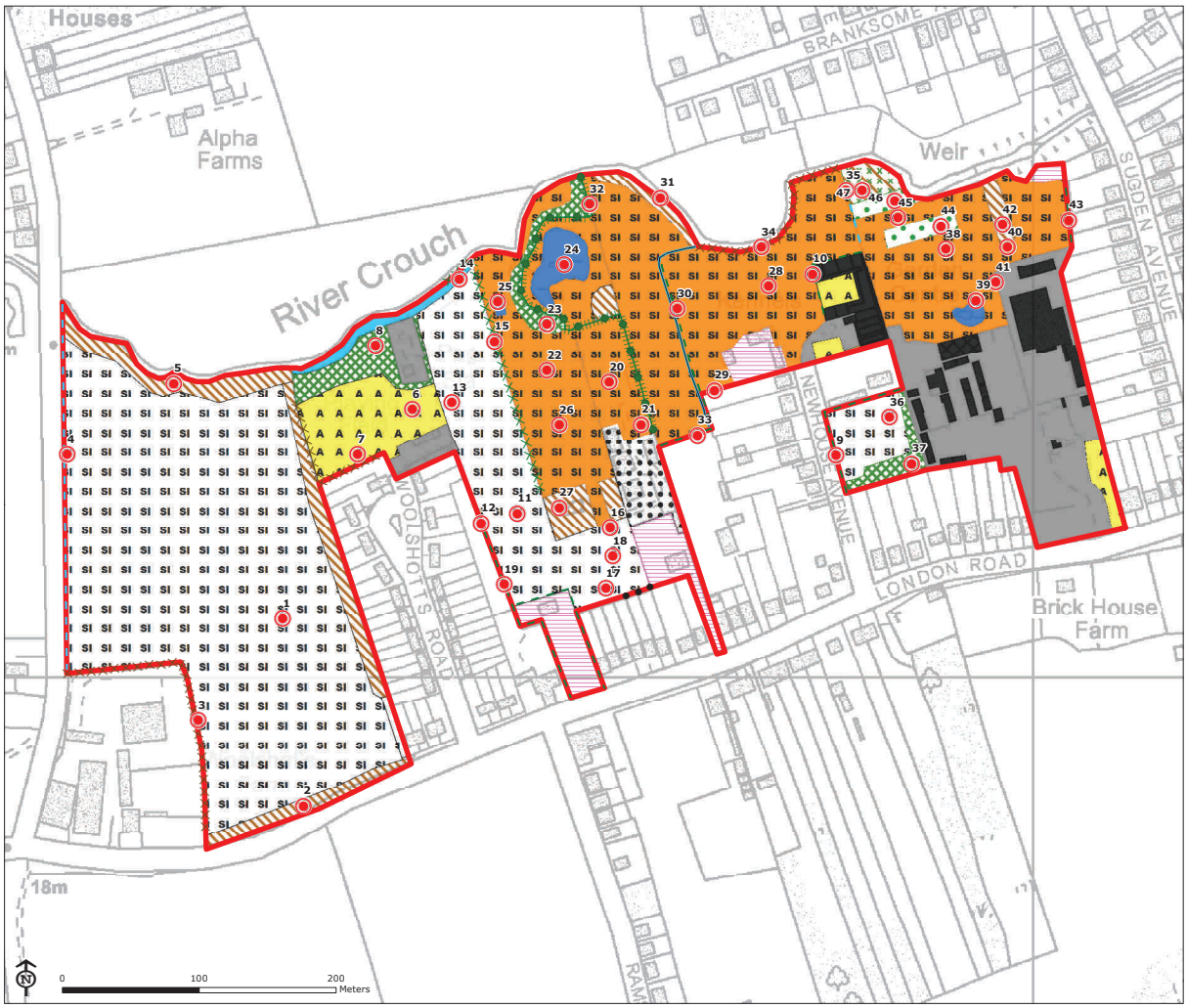
Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain and enhance existing areas of habitat of particular value (such as the habitat mosaic in the east of the site).

Measures are developed to avoid impacts on the River Crouch, as well as associated LWS's.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 17.1: Phase 1 Habitat Survey: Site 14- Land West Wickford, west of Sudgen Avenue and North of the

- Site Boundary
- Target note
- Scrub (dense/continuous)
- Scrub (scattered)
- Defunct hedge (species-poor)
- Hedge with trees
- Dry ditch
- Tree line
- Wet ditch
- Scrub (dense/continuous)
- Scrub (scattered)/Other tall herb and fern (ruderal)
- Broadleaved scattered trees
- Neutral grassland (semi-improved)
- Improved grassland
- Poor semi-improved grassland
- Other tall herb and fern (ruderal)
- Standing water
- Running water
- Hardstanding
- Amenity grassland
- Buildings
- Bare ground
- Private residence

LUC

Map Scale @ A3: 1:2,700

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

18 Site 15: Land at Bradfields Farm, Burnt Mills Road, North Benfleet

Survey Site	Site 15	**Location**	North Benfleet

Site Overview

The Site is located to the north-east of Basildon, and is abutted in the north by the A127, in the east by Pound Lane, in the south by Burnt Mills Road and in the west by Burnt Mills Industrial Estate in the west.

The Site itself comprises largely agricultural land, with areas of improved grassland pasture and arable fields. A network of hedgerows runs throughout the Site.

Site Photographs

Arable land in the east of the Site

Grassland in the centre of the Site

Poor semi-improved grassland in north-east of the Site

Improved grassland pasture in the west of the Site

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. Similarly there are no nationally designated Sites within 1km of the Site boundary.

The following Local Wildlife Sites have been identified within 1km of the Site boundary:

The Wick County Park –recently created park supporting a range of habitats including woodland, rough grassland and ponds. Also supports the Essex red data list species flattened meadow-grass (240m north);

Home Farm Meadow – unimproved grassland supporting the Essex red data list species pepper saxifrage(260m north); and

Burnt Mills – open mosaic habitats on previously built land, important invertebrate assemblage, good mix of wetland species (450m east).

Species records

No records of protected or notable species have been identified within the Site boundary.

Habitat Description (see Figure 18.1)

Amenity Grassland with Scattered Trees

Amenity grassland with scattered trees was noted south of farm buildings to the south of the Site. Scattered trees included mature holm oaks and fruit trees.

Improved Grassland

Improved grassland was noted in the central, southern and eastern parts of the Site. In the central part of the Site the grassland formed a large field, part of which appeared to have been sprayed with herbicide. In the east of the Site the grassland was grazed by cattle and was dominated by perennial rye grass, with abundant cock's-foot and abundant white clover. To the south of the Site, around the periphery of the farm, the grassland was grazed by horses and dominated by perennial rye-grass with abundant common dandelion.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in the north-east of the Site within a small field abutting a caravan site and also in a field in the south-east of the Site. The grassland had a slightly longer, tussocky structure to the west and was dominated by perennial rye-grass with abundant cock's-foot, white clover and meadow buttercup. Dove's-foot cranesbill and sorrel were present but rare. To the south the grassland was dominated by perennial rye-grass with abundant white clover, occasional annual meadow grass and false oat-grass. Dove's-foot cranesbill was present but rare. Locally abundant vetch *Vicia* sp. was noted to the west of this area along the perimeter of an access track.

Hedgerows

Intact hedgerows were present throughout the Site. These appeared to be species poor and included a mixture of hawthorn, blackthorn and elm. Mature oak trees were also noted within a hedge along the northern Site boundary, including ash and oak.

Arable

Two arable fields were noted in the south-west and north-east of the Site. These supported a maize crop at the time of survey. The field margins were cut short and supported similar species to the improved grassland discussed above.

Standing Water

An ornamental pond was noted within the farmyard to the south of the Site. The pond was devoid of aquatic vegetation, and bank vegetation included species such as cock's-foot and perennial rye-grass. Scattered trees including oak and willow were present around the periphery.

Buildings and Hardstanding

Farm buildings and associated areas of hardstanding were noted in the southern part of the Site. A farmhouse and a relatively newly constructed residential dwelling were also noted.

Fauna

Potential was identified for the following protected species within the Site:

Reptiles – the main area of the Site suitable for common and widespread reptiles (in particular, common lizard, grass snake and slow worm) was an area of poor semi-improved grassland in the north-east of the Site. It should be noted that whilst other areas of grassland are not currently suitable to support reptiles, should the sward be left uncut they could become suitable in the future.

Badger – the habitats present on the site provide suitable foraging habitat for badger, whilst banks around field margins provide opportunities for sett building.

Bats – hedgerow trees in the north of the Site and farm buildings provided limited opportunities for roosting bats. Hedgerows and treelines within the Site provided commuting and foraging habitat for bats although these were suboptimal given the low value of surrounding agricultural fields.

Although sub-optimal given the lack of vegetation, the farm pond may support breeding GCN. Surrounding habitats are similarly of a relatively low suitability although grassland and field margin habitats may provide foraging and shelter opportunities of this species is present. Birds – nesting birds are likely to be present within the hedgerows and trees, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The fields may also support ground nesting species. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development. Brown hare – arable and grassland habitats within the Site have the potential to support this species. It is unlikely that dormouse would be present within the Site given the lack of suitable habitat for this species; particularly woodland. Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present. No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.	
Ecological Appraisal	
Designated Sites	No nationally or internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Given the distance and/or lack of ecological connectivity, it is considered unlikely that development would impact on nearby LWS's.
Habitats	Habitats within the Site are largely relatively common and widespread habitats with relatively low intrinsic value, being dominated by agriculutral grassland and arable fields of low species diversity. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Although arable field margins are also an Essex BAP Priority Habitat this includes only those which are managed specifically for the benefit of wildlife. The field margins, where present, were closely mown and do not meet the criteria as described within the BAP.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present through the site, with hedgerows likely to be of highest value to a wide range of species. The grassland and arable habitats are likely to be of low value for species, however there is some potential for species such as brown hare or farmland/ground nesting birds to be using these habitats (the potential for such species to be present would increase should the field margins and grasslands develop a longer, more tussocky structure). Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Reptiles within grassland habitats, particularly in the north-east of the

	Site; • GCN considered to be a low risk given the quality of the habitats but presence cannot be ruled out; • Badgers, particularly the presence of setts associated with field boundaries; • Bats roosting within hedgerows and buildings trees, although value of the Site for foraging and commuting bats is likely to be low (however hedgerow fragmanetation and lighting could impact on these species); • Brown hare using open grassland and arable fields; • Nesting birds could also be affected by any removal of scrub or trees, or loss of grassland/arable habitat.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Survey and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular species surveys may be required for reptiles, GCN, badger, bats, hare and birds subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, in particular hedgerow surveys.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain hedgerows and mature trees where possible. Best practice construction methods as detailed within a Construction and Environment Management Plan, or similar, should be followed to protect retained habitats from runoff, smothering and dust deposition and root compaction.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Measures to prevent harm to reptiles and GCN, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals, such as brown hare or ground nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The Site in general supports relatively common and widespread habitats of low intrinsic value, with their value mainly relating to the species which they may support.

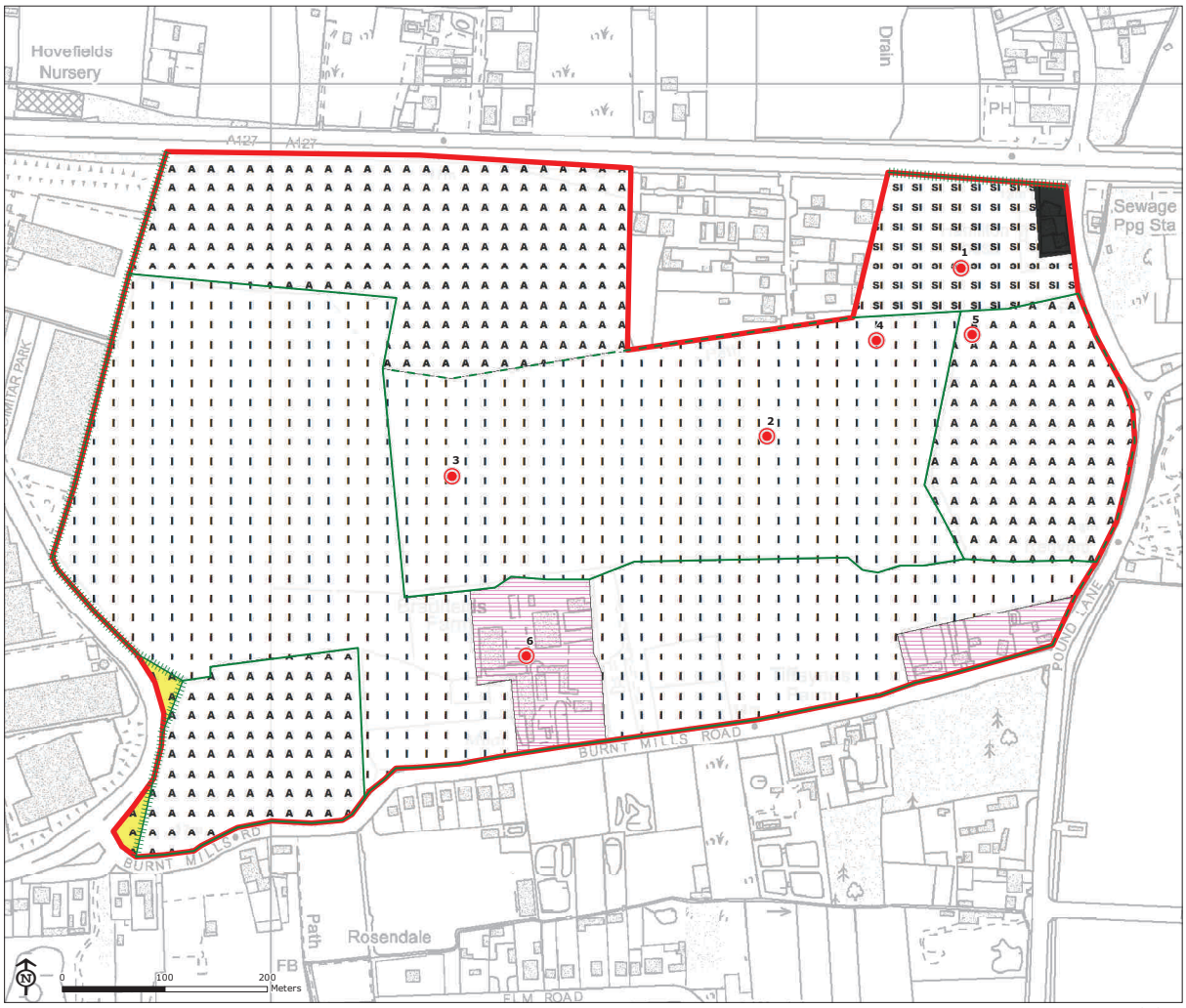
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 18.1: Phase 1 Habitat Survey: Site 15- Land at Bradfields Farm, Burnt Mills Road, North Benfleet

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Improved grassland
- Poor semi-improved grassland
- Arable
- Amenity grassland
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:3,600

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

19 Site 16: Land South of Dunton Road, Laindon, Basildon

Survey Site	16	Location	Basildon

Site Overview

The Site is situated north of Laindon, comprising a linear parcel immediately to the north of the A127 and south of Dunton Road. Agricultural land, private properties and the River Crouch are located to the north of Dunton Road, with employment and residential land to the south of the A127.

The Site itself comprised of agricultural land with private properties, including a farm and residential housing.

Site Photographs

View of arable land

View scrub in the east of the site

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. Similarly there are no nationally designated sites wihtin 1km of the Site.

There are no local designations within the Site boundary. Local Wildlife Sites wihtin 1km of the Site include:

Poles Wood–ancient deciduous woodland (abuts the Site to the north);

Gravelpit Wood ancient deciduous woodland- (150m north-west);

Little Burstead Wood LWS –inter-connected chain of three mixed deciduous (potentially ancient) woodland (475m north-east);

River Crouch at Noak Bridge – the river and flood alleviation area support a rich flora and a water vole

population (615m north-east);

Southfields Washland – mosaic of habitats supporting several red data book species including blue fleabane, yellow-wort and kidney vetch (700m south-west);

St Margarets Wood and lane – important wildlife corridor along an ancient track-way (710m north-west); and

St Nicholas Church Complex – mosaic of habitats supporting GCN, common lizard, slow worm and adder (1km south-east).

Species Records

No records of protected and/or notable species wereidentified within the Site.

Habitat Description (see Figure 19.1)

Amenity Grassland

Amenity grassland was recorded in the west of the Site, to the east of the residential housing and to the east adjacent to Steeple View Farm. Species included perennial rye grass, Yorkshire fog, hawkbit *Leontodon sp*, red clover and dandelion.

Scrub

Dense scrub with scattered trees was identified south of Sellar's Farm. Species included blackthorn and oak.

Dense scrub was also noted in the west of the Site, north of the A127 and south of the residential housing. Species included blackthorn, sycamore, crack willow, hawthorn, ash, poplar *Populus sp* and bramble.

Tall Ruderal Vegetation

Tall ruderal vegetation was noted in small areas within the Site. To the west tall ruderal vegetation was recorded within the areas south of the residential housing and north of the A127 with dense scrub and scattered trees (See above). Species included common nettle, common fleabane and great willowherb.

Tall ruderal vegetation was also identified south of the residential housing in the east. Species included common nettle, perennial rye grass, ivy, cleaver, frequent ribwort plantain and spear thistle.

Hedgerows and Treelines

Hedgerows bordered the field boundaries. Many were defunct and species-poor. One hedgerow to the south of the Site between residential housing and Steeple View Farm was considered species-rich, with mature oaks also noted within the hedgerow. Species included hawthorn, elm, blackthorn, oak, ash, field maple, sycamore, horse chestnut, hazel and spindle.

Arable

Arable fields dominated the site and had been recently ploughed, resulting in bare ground.

Buildings

Buildings within the Site, included farm buildings and residential housing.

Other Habitats

Ditches were identified along the field boundaries in the Site. Most were dry with the exception of one in the south west of the Site.

Fauna

Potential was identified for the following protected species to be present within the Site:

Great Crested Newts – GCN may breed in the vicinity, with waterbodies identified within 500m of the Site (as identified from OS base mapping; further investigation would be required) and a wet ditch located on the site itself. Terrestrial habitats were largely unsuitable for GCN, with gardens, tall ruderal, hedgerows and scrub habitat providing relatively small areas of potential terrestrial habitat.

Badgers – there is potential for badgers to forage and commute through the Site, although opportunities for sett building were relatively limited.

Bats – there is potential for bats to roost in mature trees present along the field boundaries and within buildings, although the site itself supported habitat likely to be of relatively low value for foraging and commuting bats.

Birds –nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The fields were considered unlikely to support ground nesting species given their relatively small size and presence of surrounding hedgerows/trees and roads. Similarly use of the fields by wetland/wading birds is considered highly unlikely.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate, such as the shrill carder bee would be present. The site was also considered largely unsuitable for reptiles given the small, isolated areas of potential habitat.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally or internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are no Local Wildlife Sites within the Site. However, directly north of the Site is Poles Wood Local Wildlife Site. New developments could result in off-site impacts to this site including contamination (run-off, smothering and dust deposition) and increased levels of visitor pressure due to an increase in the local population.
Habitats	The habitats identified within the Site are common and widespread, and are of low ecological value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present within relatively localised areas of the site. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include:

	• GCN breeding within waterbodies and utilising small areas of suitable terrestrial habitat. • Bats roosting in the mature trees and buildings. • Nesting birds within hedgerows and scrub.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, birds and bats subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, such as hedgerow surveys.

Avoidance, Mitigation and Enhancement Options

Given the low value of the habitats present on site, development may present the opportunity to enhance the ecological value of the site. This would be achieved through the incorporation of green infrastructure to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats in the wider area and in particular the Poles Wood LNR.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

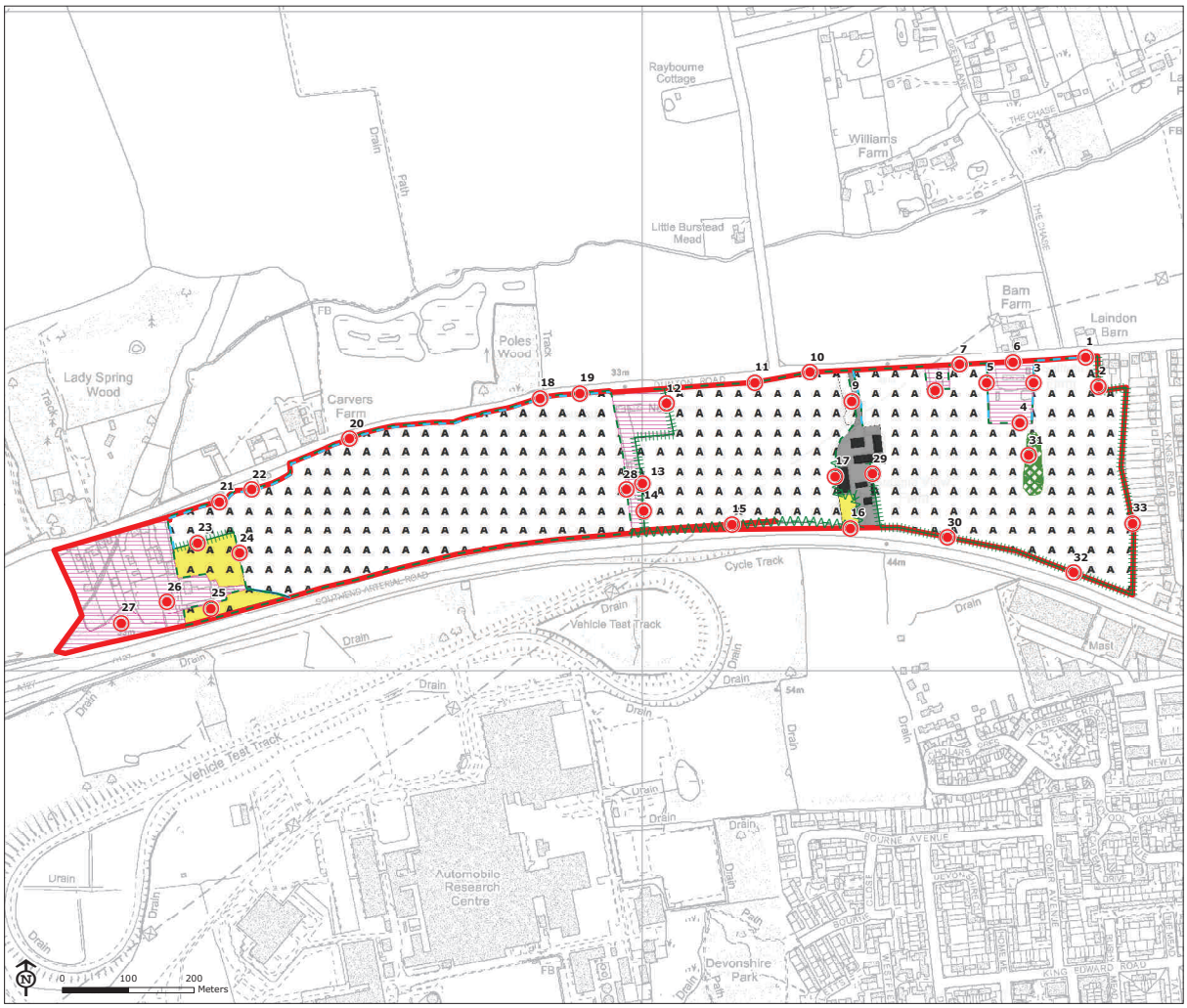
Overall Conclusion

The Site is considered to be of low ecological value. In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts, and potentially delivering enhancement, on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

Basildon Borough Council Ecology Surveys

Figure 19.1: Phase 1 Habitat Survey: Site 16- Land South of Dunton Road, Laindon

- Site Boundary
- Target note
- Defunct hedge (native species-rich)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Dry ditch
- Wet ditch
- Scrub (dense/continuous)
- Scrub(dense/continuous)/ Broadleaved scattered trees
- Hardstanding
- Arable
- Amenity grassland
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:5,600

20 Site 17: Land at Bensons Farm, North of Wash Road, Basildon

Survey Site	17	Location	Basildon

Site Overview

The Site is located to the north of Noak Bridge and is bordered by agricultural land to the North, and residential housing to the south. The River Crouch also borders a small part of the site in the very north.

The Site itself largely comprises arable land, with pockets of grassland and developments (residential properties and farms).

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. No nationally designated sites have been identified within 1km.

The following Local Wildlife Sites have been identified within 1km:

River Crouch at Noak Bridge - the river and flood alleviation area support a rich flora and a water vole population (100m west); includes water vole populations within riverine habitats;

Noak Bridge Reserve created as a receptor site for GCN and reptiles including adder as aprt of a previous housing development(300m south-east);

St Nicholas Church Complex – mosaic of habitats supporting GCN, common lizard, slow worm and adder (1km south-east).

Little Burstead Wood - inter-connected chain of three mixed deciduous (potentially ancient) woodland (600m north-west)

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 20.1)

Poor semi-improved grassland

Poor semi-improved grassland was recorded to north of the residential housing on Wash Road. The majority of the grassland had a short sward height with areas of rougher grassland to the west, surrounding old building foundations. Species included perennial rye grass, couch grass, cock's-foot, Yorkshire fog, creeping buttercup and bristly ox-tongue.

There was also poor semi-improved grassland present between Watch House Farm and arable habitat in the west of the Site. Species included by perennial rye grass, cock's-foot, bent-grass *Agrostis sp*, bramble, hedge bindweed and bristly ox-tongue.

Amenity Grassland

Amenity grassland was recorded north of Benson's Farm which included species such as dominant perennial rye grass and frequent couch-grass.

Scrub

Dense scrub was recorded to the north-west of the poor semi-improved grassland. Species included bramble and blackthorn. Scattered scrub was also noted in the north of the Site, adjacent to the River Crouch. Species present included hawthorn, bramble and field maple.

Tall Ruderal Vegetation

Tall ruderal vegetation was identified in the west of the poor semi-improved grassland and comprised of species such as great willowherb, common nettle and creeping thistle.

Hedgerows and Treelines

Defunct hedges were noted along the field boundaries. Species included elm, blackthorn, bramble, oak, elder and field maple.

In addition, a treeline was recorded along the western boundary of the Site. A number of species were present, including sycamore, horse chestnut, ash, elder and oak.

Arable

Arable fields comprised the majority of the Site which were ploughed, resulting in bare ground.

Buildings

Buildings present within the site included residential properties and farm buildings.

Waterbodies

The River Crouch was recorded in the north of the Site, surrounded by scrub with scattered trees.

A vegetated wet ditch was present to the west of Benson's farm, adjacent to the public footpath.

Fauna

Potential was identified for the following protected species to be present within the Site:

Great Crested Newts – GCN may breed in the vicinity, with waterbodies identified within 500m of the Site (as identified from OS base mapping; further investigation would be required) and a wet ditch located on the site itself. Terrestrial habitats were largely unsuitable for GCN, with gardens, tall ruderal, hedgerows and scrub habitat providing relatively small areas of potential terrestrial habitat.

Badgers – there is potential for badgers to forage and commute through the Site, although opportunities for sett building were relatively limited.

Bats – there is potential for bats to roost in mature trees present along the field boundaries and within buildings, although the site itself supported habitat likely to be of relatively low value for foraging and

commuting bats.

Birds –nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The larger fields may also support ground nesting species given their relatively small size and presence of surrounding hedgerows/trees and roads. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development.

Otter and water vole – although a relatively short stretch of the River Crouch runs adjacent to the site, there is potential for this and adjacent woodland habitat to be used by otter as a movement corridor or for shelter. Although the ri[arian habitat was considered largely unsuitable for water vole (comprising woodland habitat), it may provide a movement corridor for this species.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate, such as the shrill carder bee would be present. The site was also considered largely unsuitable for reptiles given the small, isolated areas of potential habitat, whilst the wet ditch was considered unsuitable for water vole given its relatively isolated nature.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	No nationally/internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are also no Local Wildlife Sites present within the site. There is however a Local Wildlife Site to the west, known as River Crouch at Noak. Development could result in off-site impacts to this site including contamination of the River Crouch with impacts on associated species (including water vole). Other designated sites are unlikely to be affected given distance and/or lack of ecological connectivity to the site.
Habitats	The habitats recorded are largely common and widespread and have relatively low intrinsic value. As above, the River Crouch runs past the site and development work could result in contamination with the potential for downstream impacts. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present within localised areas of the site. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: GCN breeding within waterbodies and utilising small areas of suitable terrestrial habitat. Bats roosting in the mature trees and buildings.

	Nesting birds within hedgerows, scrub and larger arable fields. Otter using the River Crouch as a movement corridor (similarly for water vole) or associated habitats for shelter.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, bats, birds, otter and water vole.

Avoidance, Mitigation and Enhancement Options

Given the low value of the habitats present on site, development may present the opportunity to enhance the ecological value of the site. This would be achieved through the incorporation of green infrastructure to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats in the wider area and in particular the River Crouch.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Maintenance of a buffer alongside of riparian habitats, including to avoid impacts on otter;

Timing of works to avoid impacts on nesting birds.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

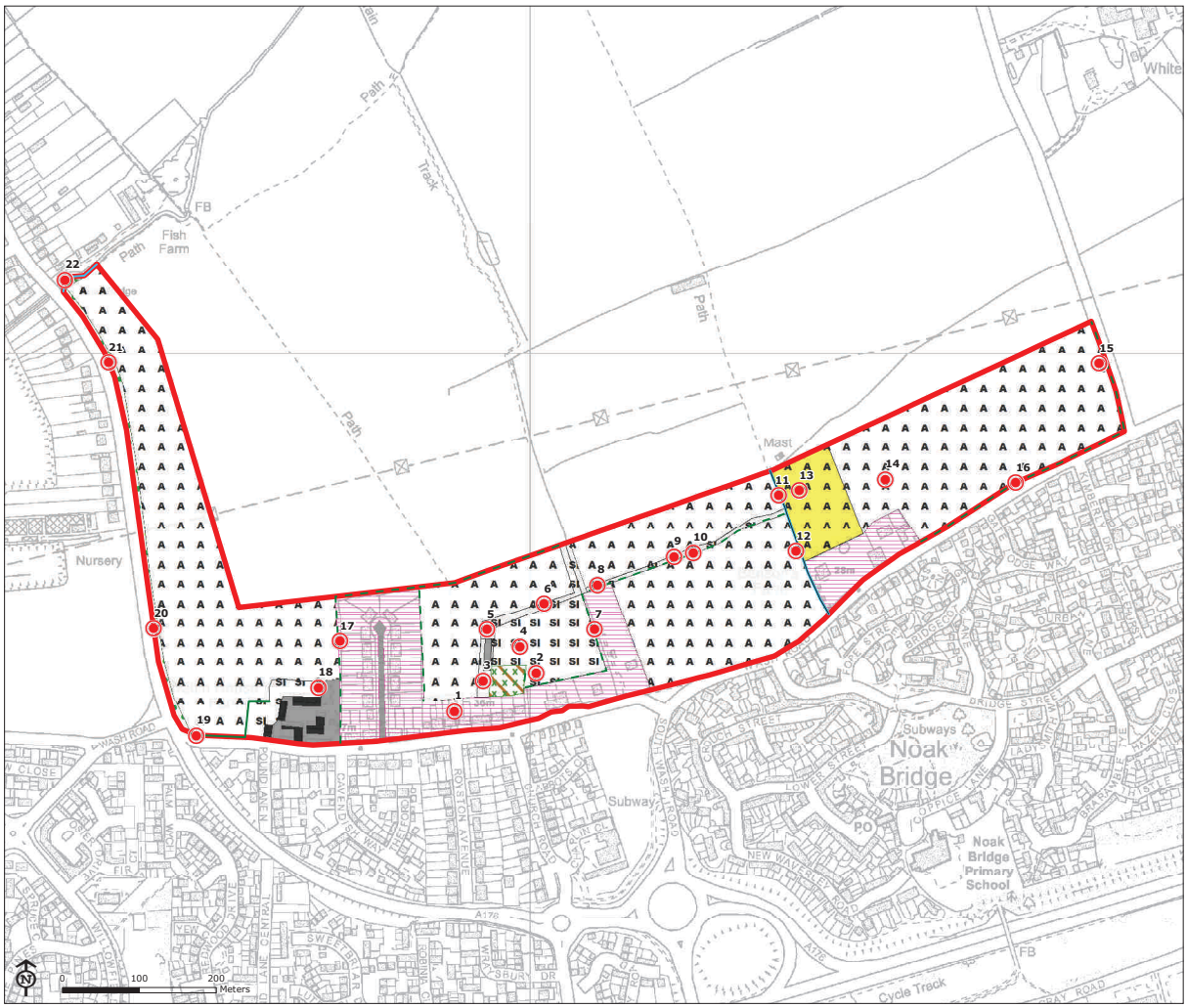
The Site is considered to be of low ecological value. In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts, and potentially delivering enhancement, on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Measures are developed to avoid impacts on the River Crouch, as well as associated LWS's.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 20.1: Phase 1 Habitat Survey: Site 17- Land at Bensons Farm, North of Wash Road

- Site Boundary
- Target note
- Running water
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Wet ditch
- Scrub(dense/continuous)/ Broadleaved scattered trees
- Scrub (scattered)/Other tall herb and fern (ruderal)
- Broadleaved scattered trees
- Poor semi-improved grassland
- Hardstanding
- Arable
- Amenity grassland
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:4,800

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

21 Site 18: Land West of South Green, Billericay

Survey Site	18	Location	Billericay

Site Overview

The Site was situated to the south of Billericay and was abutted by residential housing to the north and east, with Kennel Lane forming the eastern boundary) and open fields to the south and west. The north of the site is also dissected by Kennel Lane.

The Site itself supports a range of habitats, dominated by agricultural land (both grassland and arable), as well as private properties in the north and a reservoir use by local fishing group.

Site Photographs

View of grassland west of the woodland in the east

View of grassland adjacent ot reservoir

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the district borough, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

Nationally designated sites within 1km of the Site include:

Mill Meadows SSSI – unimproved neutral grassland supporting two red data book invertebrate species (400m north-east); and

Mill Meadows LNR –supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (350m north-east).

Nature conservation designations located in the wider area include:

Laindon Common LWS – ancient acid grassland, and also supports populations of a rare arboreal ant *Lasius brunneus* (200m west);

Frith Wood - Ancient Woodland (460m west);

The Wilderness LWS – Relict ancient woodland with several small ponds supporting populations of notable plant species such as bitter vetch (760m south-west); and

Little Burstead Wood LWS –Inter-connected chain of three mixed deciduous (potentially ancient) woodland (770m south-west).

Species Records

Records of protected and/or notable species identified within the Site included:

Brown long-eared bat.

Habitat Description (see Figure 21.1)

Semi-improved grassland

Relatively small areas of semi-improved neutral grassland was recorded south of Kennel Lane, to the east of the private properties, with two small fields to immediately north of the reservoir.

The grassland to the east of the private properties included perennial rye grass, cock's-foot, Timothy, creeping buttercup, creeping thistle and bent-grass *Agrostis sp*.

The field to the north-east of the reservoir was regularly mown, resulting in a short sward height. Species included perennial rye grass, red clover, vetch *Vicia sp*, field bindweed, meadow buttercup and creeping thistle. The field to the north-west of the reservoir was unmanaged resulting in a tall structure with scattered scrub. Species included cock's-foot, creeping buttercup, vetch, tufted-hair grass and agrimony.

Poor semi-improved grassland

Poor semi-improved grassland was identified in the west of the Site, south of the private properties. The poor semi-improved grassland in the west of the area (immediately south and south west of the private properties) were used as horses paddocks with some areas more heavily grazed than others. The structure of the grass was short with some areas of rough grassland and bare ground. Species included perennial rye grass, cock's-foot, creeping thistle, crested dog's-tail, bent-grass *Agrositis sp*, smaller cat's-tail, dock *Rumex sp*, white clover and yarrow.

The remaining areas west of the semi-natural broadleaved woodland had a rank grassland structure with species including perennial rye grass, cock's-foot, common fleabane, common nettle and creeping thistle.

Improved grassland

Small areas of improved grassland was noted in the south of the Site, including surrounding the Reservoir. The grassland was short and species included perennial rye grass and red fescue.

Amenity grassland

Amenity grassland was noted to the south-east of the residential housing and was dominated by perennial rye grass.

Semi-natural broadleaved woodland

Semi-natural broadleaved woodland was recorded in the north east, adjacent to Kennel Lane. The canopy layer was comprised of dominant ash with abundant birch *Betula sp* and frequent oak. The shrub layer included species, such as dominant hawthorn, abundant field maple, frequent holly and occasional rhododendron. The ground flora was dominated by ivy.

Scrub

Scrub was noted in small areas within the Site. Dense scrub was identified south of Kennel Lane along the eastern boundary. Species included bramble, blackthorn, hawthorn, crack willow and oak.

Dense scrub was also noted to the south of the residential housing next to the amenity grassland. Species included bramble, hawthorn, elder and cherry.

Areas of scattered scrub were also recorded through the site including hawthorn, bramble, blackthorn and

ash.

Tall ruderal

Tall ruderal communities were recorded in locations through the site including within various grassland and arable fields and around the reservoir. Species included common nettle, great willowherb, horsetail *Equisetum sp*, bracken, bristly ox-tongue, creeping thistle, fat hen and tufted hair-grass.

Hedgerows and Treelines

Hedges were recorded surrounding the site and along some internal field boundaries, and included blackthorn, ash, hawthorn, oak, bramble and field maple.

Treelines were also recorded within the Site between arable field boundaries and between areas of private land. The treelines between the arable field boundaries included mature oaks and conifers. In contrast treelines between areas of private land, included conifers, birch *Betula sp*, sycamore and poplar *Populus sp*.

Arable

Arable land was noted in the north and south of the Site. In the north the field appeared to have been reseeded as a grass ley; whilst the land in the south had been recently ploughed, resulting in bare ground.

Buildings

The majority of the buildings within the Site were residential with some farm buildings.

Other Habitats

A reservoir is located in the south of the Site, opposite Coopers Drive, with vegetated banks including wetland species such as rushes. The reservoir is regularly used by a private fishing group. A pond was also recorded within woodland to the east of the private properties, supporting dense marginal vegetation.

A mixture of wet and dry ditches were noted in the south of the Site. The ditches were found to be partially vegetated.

Fauna

Potential was identified for the following protected species to be present within the Site:

Great Crested Newt – there are a small number of waterbodies identified within the Site and within 500m (as identified from OS base mapping; further investigation would be required) which provide breeding opportunities for GCN. The terrestrial habitats within the Site provide suitable foraging, shelter and overwintering opportunities including rough grassland, woodland, scrub, tall ruderal and hedgerows/treelines.

Reptiles – the mosaic of rough grassland, scrub and hedgrows through the Site provide suitable conditions for reptiles to forage, shelter and overwinter.

Badgers – the presence of woodland and open grassland and arable land provides suitable opportunities for foraging and sett building.

Bats – the Site provides suitable habitat for bats to forage and commute. There are also a number of mature trees that may provide roosting opportunities, as well as buildings.

Water voles – the vegetated wet ditches within the site may provide opportunities for water vole to forage and shelter assuming connectivity to a wider ditch network, as may the reservoir and pond.

Birds –nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The larger fields may also support ground nesting species. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development.

Brown hare – the mosaic of grassland and arable land may be suitable for brown hare to forage and shelter within the Site. Their presence may be affected by the levels of disturbance from farming methods and livestock.

The presence of dormouse is considered unlikely due to a lack of large areas of woodland in the vicinity and

given the relatively species-poor hedgerow network. Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present. No invasive species were noted on the Site.	
Ecological Appraisal	
Designated Sites	There are no nationallyor internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. It is considered unlikely that development within this site would affect the nearby nationally or locally designated sites including Laindon Common LWS'given distance and intervening agricultural habitat and roads. However, there may be potential for increased recreational pressure.
Habitats	The habitats identified within the Site are mostly common and widespread, which are of low ecological value. However, the mosaic of habitats provided by the site is likely to be of value to wildlife in the local context, in particular the eastern part of the site with a mosaic of woodland, scrub and rough grassland habitats east of the private properties as well as the pond, reservoir and associated wet ditches. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Ponds are also identified as Essex Biodiversity Action Plan Priority Habitat and could be affected by habitat loss as well as contamination during works. Lowland mixed deciduous woodland is also listed as an Essex Biodiversity Action Plan Priority Habitat and was found to the west of the Site. Loss of habitat within the Site, resulting in habitat fragmentation and increased disturbance during and after development may therefore cause impacts to this BAP Priority Habitat and its associated species.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site. The mosaic of grassland, hedgerows/treelines, scrub, woodland and ponds are likely to provide opportunities for a wide range of species. Arable land is considered to be less valuable to wildlife, due to the high levels of management. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Great crested newt with associated waterbodies and terrestrial habitat. • Reptiles present within rough grassland, as well as hedgerows, scrub and tall ruderal habitats. • Potential for badger setts within hedgerows, scrub and woodland, and foraging through the site. • Bats roosting within mature trees and buildings, and

	foraging/commuting through the site. • Water vole associated with waterbodies. • Nesting birds within hedgerows, scrub and larger arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, bats, badger, birds and water vole.

Avoidance, Mitigation and Enhancement Options

The majority of the habitats present on the site are of relatively low value, in particular the grazed /managed grassland and arable fields. However, the eastern part of the site, comprising land to the east of the priovate properties and alongside Kennel Lane, presents a relatively diverse habitat mosaic likely to be of value to a range of species. It is recommended that this area of woodland, rough grassland, scrub and waterbodies (including the reservoir) is excluded from any development. Indeed, its management and sensitive incorporation in to any development schemes may present the opportunity for ecological enhancement and access to nature, potentially mitigationg any oncrease in recreation pressure on nearby sites.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect habitats in the wider area and in particular the River Crouch.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptile, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Maintenance of a buffer alongside wetland habitats, including to avoid impacts on water vole;

Timing of works to avoid impacts on nesting birds.

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The majority of the site is of relatively low value comprising arable farmland or managed grassland. The central, eastern part of the site is likely to be of increased value for wildlife give the habitat mosaic present, and loss of this area would be likely to result in a significant ecological impact.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

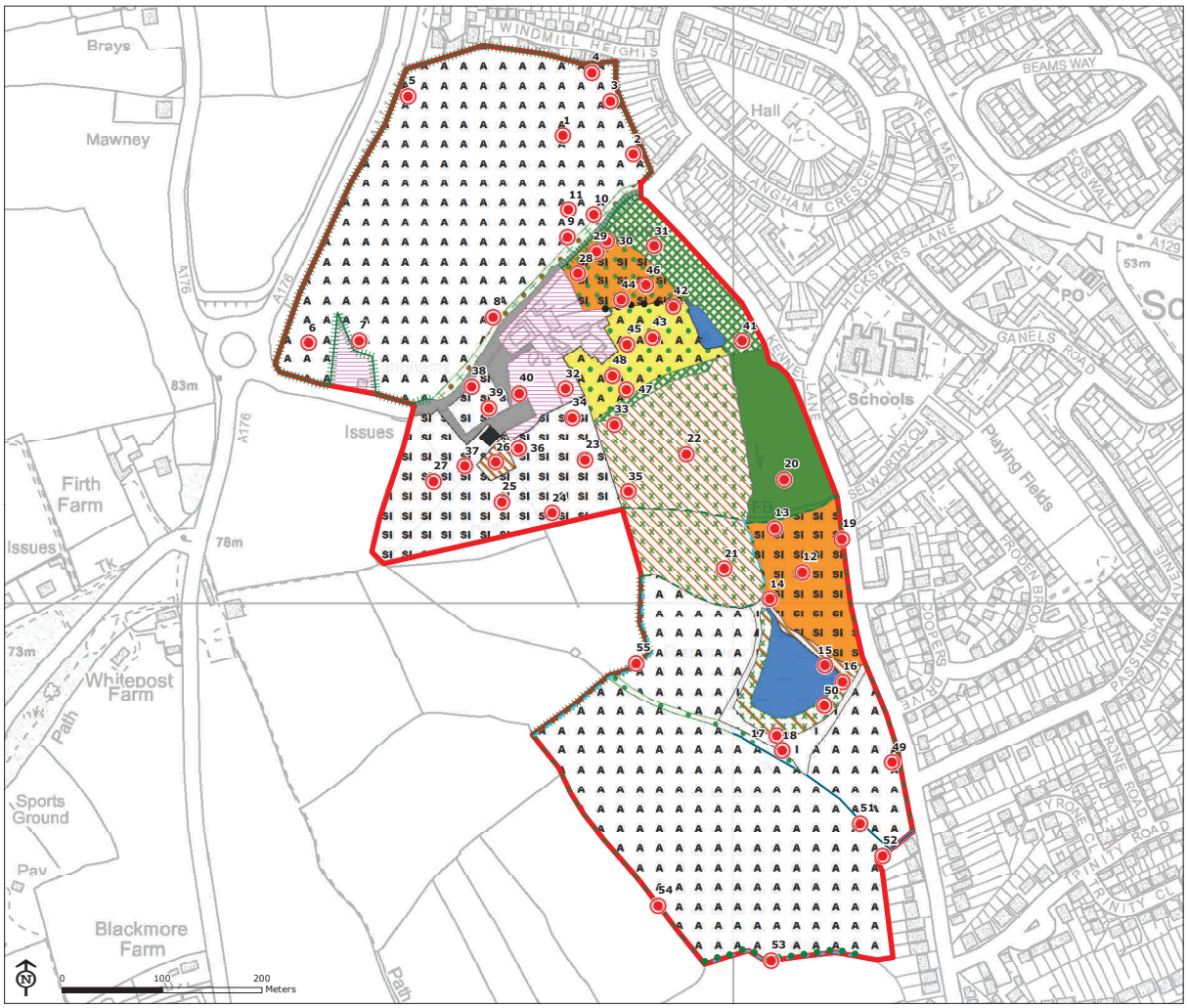
Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance

and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows, treelines and ditches, and that, in particular, the habitat mosaic present within the central eastern part of the Site is retained and incorporated in to landscape proposals.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 21.1: Phase 1 Habitat Survey: Site 18- Land West of South green

- Site Boundary
- Target note
- Broadleaved scattered trees
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Dry ditch
- Tree line
- Wet ditch
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Scrub (scattered)/Other tall herb and fern (ruderal)
- Broadleaved scattered trees
- Neutral grassland (semi-improved)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Neutral grassland (semi-improved)/Broadleaved scattered trees
- Improved grassland
- Poor semi-improved grassland
- Other tall herb and fern (ruderal)
- Other tall herb and fern (non ruderal)/Scrub (scattered)
- Standing water
- Hardstanding
- Arable
- Amenity grassland/ Broadleaved scattered trees
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:3,700

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

22 Site 19: Land North of Billericay, West of Stock Road, Billericay

Survey Site	Site 19	**Location**	Billericay

Site Overview

The Site is located to the north of Billericay, with Stock Brook Country Club adjacent to the north-east, Queens Park Avenue to the south and Stock Road to the east. To the north lies further agricultural land.

The Site itself mostly consists of a golf course associated with the Country Club, with small areas of pastoral land to the north-east and south-west. Several buildings also fall within the Site boundary, including Buttsbury Lodge and Farm, Great Blunts Farm and several private residences.

Site Photographs

View of Great Blunts Farm from grass pasture in the north-east of the Site.

View of the golf course from the southern Site boundary.

Avenue of trees along the Country Club access road

Poor semi-improved grassland in the south-west of the Site

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relativelyclose proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated sites were identified within 1km of the Site:

Norsey Wood SSSI listed on the Ancient Woodland Inventory, large mixed chestnut coppice derived from acid oak woodland, 1km south; and

Norsey Wood LNR designation covers those parts of the wood not designated as SSSI, 1km south.

The following Local Wildlife Sites were identified within 1km of the Site boundary:

Queens Park Country Park – Newly created country park supporting species-rich wildflower meadow, woodland and scrub. The habitats support several local and nationally scarce invertebrate species (abuts the site to the west);

Buckwyns wood – developing woodland supporting numerous ancient woodland indicator plants and long-eared owls (450m west);

Queens Park Meadow - species rich lowland meadow and inundation grassland (980m west);

Forty Acre Plantation - an area of ancient woodland supporting many ancient woodland indicator species (1km south-east)

Species records

No records of protected or notable species have been identified within the Site boundary.

Habitat Description (see Figure 22.1)

Amenity Grassland

A large area of amenity grassland was recorded in the centre of the Site associated with the golf course. This was very closely mown and was dominated by perennial rye-grass and red fescue.

Improved Grassland

Improved grassland was located within two fields in the north-east of the Site, and one in the east, and was dominated by perennial rye-grass. The grass was not grazed at the time of survey however it was of a short length, potentially having been cut earlier in the year.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in the south-west of the Site within a small field abutting Queens Park Avenue. The grassland was dominated by false oat-grass and cock's-foot, with occasional Timothy, ribwort plantain and cow parsley.

Hedgerows and Treelines

Intact hedgerows enclosed the fields in the north-east and south-east of the Site. These appeared to be species poor and included a mixture of hawthorn and blackthorn. Mature oak trees were also noted within the hedges, some of which appeared to potentially qualify as veteran trees. Treelines were noted along the access road to the Country Club in the south of the Site, comprising poplar to the north of the road, and mature oaks to the south.

Fauna

Potential was identified for the following protected species within the Site:

Great crested newt –Grassland within the Site is capable of supporting this species. Hedgerows provided further suitable habitat, with cracks and crevices in the ground providing opportunities for shelter, foraging and hibernation, and connectivity through the site. Several ponds were noted within the golf course which may provide breeding habitat.

Reptiles –the main area of the Site suitable for common and widespread reptiles (in particular, common lizard, grass snake and slow worm) was an area of poor semi-improved grassland in the west of the Site, part of which was unmown and supported a denser structure than surrounding grassland. It should be noted that whilst other areas of grassland are not currently suitable to support reptiles, should the sward be left uncut they could become suitable in the future, whilst field edges and hedgerows may also provide localised habitat including for roaming individuals.

Dormouse – the Site supports hedgerows capable of supporting dormouse. In particular, hedgerows in the west of the Site are connected to a much larger area of woodland outside of the site and therefore there is the potential for dormouse to be present. Hedgerows in the north-east of the Site are not connected to suitable large areas of woodland and therefore the risk of dormouse being present in these hedgerows is considered low.

Badger – the habitats present on the site provide suitable foraging habitat for badger, whilst hedgerows and nearby woodland provide suitable opportunities for sett building.

Bats – The Site provide potential roosting habitat for bats within trees along field boundaries (hedgerows and mature treelines) and buildings. Hedgerows and treelines within the Site also provide suitable commuting routes for bats, whilst grassland areas and waterbodies provide potential foraging habitat.

Birds – nesting birds are likely to be present within the hedgerows and trees, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Given the relatively high levels of disturbance within the majority of the Site it is considered unlikely that ground nesting birds, such as skylark, would be present. However grassland in the south-western and north-eastern parts of the site displayed lower levels of disturbance given the lack of public access and therefore the presence of these species cannot be ruled out. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development.

There are no ditches or other water courses within the Site capable of supporting water vole or otter, and

brown hare are considered unlikely to use the site given public access through most of theSsite and the relatively small areas of undisturbed grassland. Given the high levels of management across the Site it is considered unlikely that brown hare would be present. Given floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present. No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.	
Ecological Appraisal	
Designated Sites	No nationally or internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Similarly given the distance and lack of ecological connectivity between the Site and Nationally designated sites it is highly unlikley that development would result in impacts. No Local Wildlife Sites (LWS) are present within the Site, however three sites lie in close proximity, as discussed above in the Biological Records section. There is therefore the potential for off-site impacts on this site including contaimination (run-off, smothering and dust deposition) and increased levels of visitor pressure due to an increase in the local population, in particular for the adjacent Queens Park Country Park LWS.
Habitats	Habitats within the Site are largely relatively common and widespread habitats with relatively low intrinsic value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Ponds are also identified as Essex Biodiversity Action Plan Priority Habitat. In addition, the Site supports a number of mature trees which may qualify as veteran trees and are therefore subject to specific protection under National planning policy. Trees may be lost as a result of proposals, or indirectly affected by adjacernt ground disturbance.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present within the site, with hedgerows and waterbodies likely to be of highest value to a wide range of species. The grassland habitats are likely to be of lower value for species, however there is some potential for species such as farmland/ground nesting birds to be using these habitats for shelter (the potential for such species to be present would increase should the field margins and grasslands develop a longer, more tussocky structure). Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Reptiles within grassland habitat, particularly in the south-west of the Site; • GCN associated with ponds, grasland and hedgerow habitats;

	• Badgers, particularly the presence of setts along field boundaries; • Dormouse within the hedgerows; • Bats roosting within hedgerow trees and buildings. Bats may also use linear habitats for foraging and commuting with fragmentation and habitat loss potentially affecting these species. • Nesting birds could also be affected by any removal of scrub or trees, or loss of grassland habitat.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for reptiles, GCN, badger, dormouse, bats and birds subject to proposals. More detailed vegetation surveys, such as hedgerow or veteran tree surveys, may also be required subject to develepment proposals.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain waterbodies, hedgerows and mature trees where possible. Best practice construction methods as detailed within a Construction and Environmental Management Plan, or similar, should be followed to protect retained habitats from runoff, smothering and dust deposition and root compaction. New development may also result in an increase in recreational pressure on the adjacent LWS and therefore mitigation should include measures to guard against this. Options could include the provision of high quality natural greenspace and recreation land as an alternative resource to sensitive habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Mitigation to protect dormouse including avoiding the severance of suitable habitat features (including hedgerows). Were removal of hedgerows is required, vegetation management or translocation of dormouse to a previously prepared receptor site under a NE licence may be required;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals, such as ground nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

Overall the Site was considered of relatively low ecological value, with a large proportion already subject to

recreational disturbance. Particularly valuable habitat features included hedgerows, ponds and potential veteran trees.

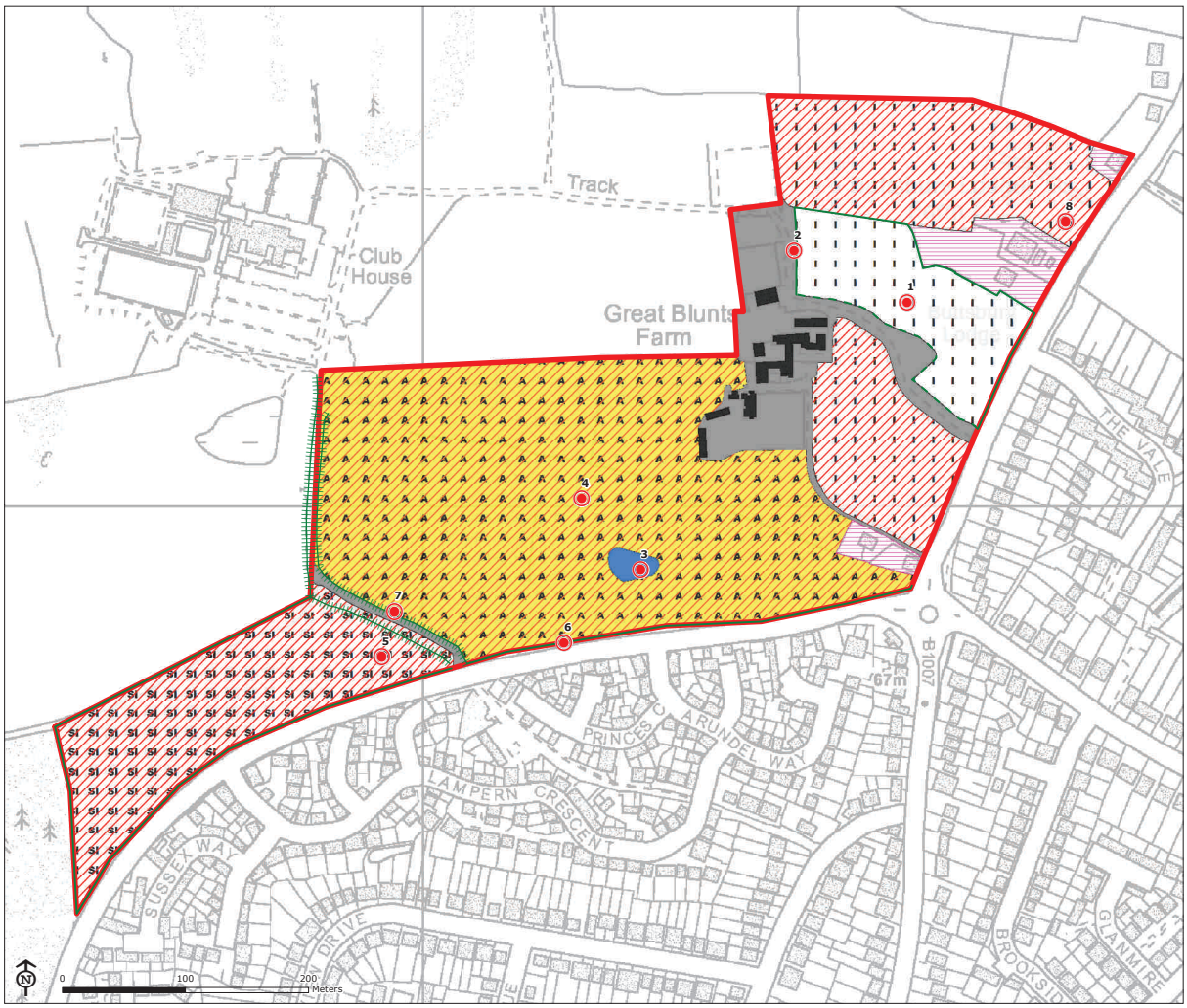
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines, and particularly valuable habitats including ponds and potential veteran trees.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 22.1: Phase 1 Habitat Survey: Site 19- Land North of Billericay, West of Stock Road

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Improved grassland (no direct access)
- Improved grassland
- Poor semi-improved grassland (no direct access)
- Standing water
- Hardstanding
- Amenity grassland (no direct access)
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:3,000

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

23 Site 20: Land North-east of Potash Road, Billericay

Survey Site	Site 20	**Location**	Billericay

Site Overview

The Site is located to the north-east of Billericay, with residential properties adjacent to the north-west, Potash Road to the south-west and Goatsmoor Lane to the south-east. To the east and south of the Site are woodland and agricultural habitats.

The Site itself comprises mainly private residential properties with areas woodland and grassland, mainly in the form of grazing land. Stock Brook runs through the north-eastern part of the Site.

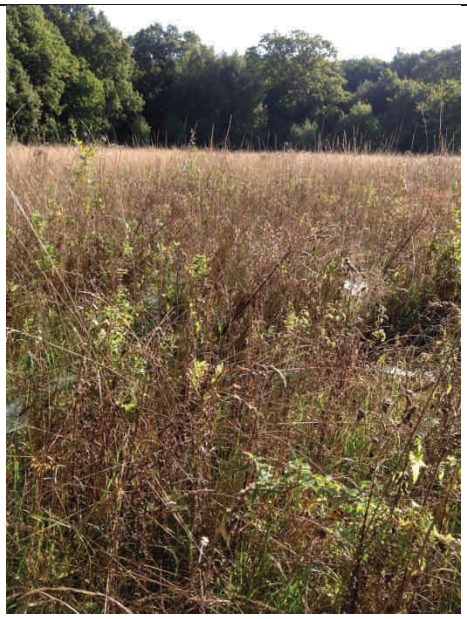
Site Photographs

Woodland glade in the centre of the Site.

Pond in the north of the Site

Semi-improved grassland in the south-east of the Site

A residential property in the north-east of the Site



Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated sites were identified within 1km of the Site:

Norsey Wood SSSI listed on the Ancient Woodland Inventory, large mixed chestnut coppice derived from acid oak woodland, (1km south); and

Norsey Wood LNR designation covers those parts of the wood not designated as SSSI, (1km south).

The following Local Wildlife Sites were identified within 1km:

Forty Acre Plantation - Ancient deciduous woodland (immediately to the south east of the Site, with a small area within the south-east of the Site); and

Queens Park Country Park – Newly created country park supporting species-rich wildflower meadow, woodland and scrub. The habitats support several local and nationally scarce invertebrate species (880 south-west).

Species records

No records of protected or notable species have been identified within the Site boundary.

Habitat Description (see Figure 23.1)

Amenity Grassland

Amenity grassland was noted in the grounds of several residential properties, comprising lawns dominated by red fescue and perennial rye-grass.

Improved Grassland

Improved grassland was noted in the centre and north-west of the Site. In the central part of the Site it was grazed by horses and very short in structure. In the north-west it was crazed by cattle. Both areas the grassland was dominated by species such as perennial rye-grass with other species indicative of improved grassland such as white clover and creeping buttercup.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in the east of the Site within two small fields abutting Springfield Farm. The grassland had a dense, tussocky structure and was dominated by cock's-foot and red fescue with common couch-grass dominant in some areas. Also present was locally abundant stitchwort, locally frequent meadow buttercup and creeping thistle, occasional false oat-grass and knapweed, which was present but rare. Several mammal paths were noted crossing the grassland and several mature and senescent oaks were also present.

Another area of poor semi-improved grassland was recorded in the north-east of the Site adjacent to Stock Brook with species similar to other areas. The grassland here was also long and tussocky and appeared to be of a damper nature, with compact rush and soft rush locally abundant.

Semi-improved Neutral Grassland

Semi-improved neutral grassland was noted in a field in the south-east of the Site. Red fescue was dominant, with cock's-foot, creeping bent, false oat-grass and ribwort plantain all abundant. Creeping thistle was locally abundant. Occasional oak saplings, ragwort and sweet vernal grass were also present, as were St. John's wort, common nettle and brome *Bromus* sp which were present but rare. Several anthills were present throughout this area and several mammal paths were also noted. The grassland itself had a long, dense structure.

An additional area of semi-improved neutral grassland was noted in the grounds of a private property. This was grazed by alpacas, with red fescue dominant; creeping bent abundant; yarrow, white clover, and meadow buttercup frequent; and Yorkshire fog, common mouse-ear and self-heal occasional.

Semi-natural Broadleaved Woodland

Several small areas of woodland were noted within the Site. An area of woodland around the perimeter of a field in the north-east of the Site adjacent to Stock Brook was dominated by oak, with occasional birch and aspen. The shrub layer was dense and dominated by hawthorn with occasional elder. The ground flora was sparse but where present it was dominated by bryophytes. To the south-east of this woodland, two small areas of secondary woodland were dominated by semi-mature oak.

A larger area of woodland was noted in the central part of the Site. Here the canopy was dominated by oak. The shrub layer was poor but where present it was dominated by hawthorn. The ground flora was sparse with cow parsley present but rare.

Further to the south-east a band of woodland was dominated by oak with silver birch present but rare. The shrub layer was dominated by hawthorn, with occasional elder and rare *Prunus* sp. The ground flora was dominated by common nettle, with foxglove, male fern and bramble all present but rare. Towards the south-western site boundary, the woodland was more managed and had been partially cleared, resulting in a more open structure. Here canopy species included occasional ash, sweet chestnut, hornbeam, birch, crack willow. The shrub layer was sparse due to recent clearance however there were areas of scrub which were dominated by bramble with abundant nettle and field bindweed, rare hawthorn and elder. Ground flora in this area included locally dominant cock's-foot, locally frequent to locally dominant nettle. Male fern, creeping buttercup, red deadnettle, soft rush and hogweed were all present but rare.

Throughout the woodlands in the central and southern parts of the Site numerous species of fungi were

noted.

Hedgerows

Few hedgerows were noted within the Site, with one potentially species-rich hedgerow noted along the eastern boundary of the "Greenwood" property. The hedge supported abundant blackthorn and occasional apple, holly, bramble, hazel, oak, hawthorn and laurel.

Pond

A single pond was recorded in the north east of the Site. This was surrounded by woodland and supported little vegetation.

Running Water

Stock Brook is located within the western part of the Site. The watercourse was completely over-shaded by dense scrub and devoid of bank or aquatic vegetation.

Fauna

Potential was identified for the following protected species within the Site:

Great crested newt – The Site provides optimum terrestrial habitat for this species, with rough grassland, scrub, woodland and hedgerows providing suitable foraging, sheltering and overwintering habitat. Several ponds were noted in the vicinity of the Site which may provide breeding habitat, with one pond located within the Site boundary.

Reptiles – rough grassland within the Site provides potential opportunities for common species of reptile including slow worm, common lizard and grass snake. Scrub and woodland also provide hibernating opportunities.

Dormouse – the Site supports woodland and hedgerows capable of supporting dormouse. The woodland within the Site is also connected to a network of further hedgerows and a large area of woodland to the east of the site, further increasing its suitability for this species.

Badger –the habitats present on the Site provide suitable foraging habitat for badger, whilst woodland within the Site and banks around field margins provide suitable opportunities for sett building. Two main badger setts were noted within the Site during the survey.

Bats – The Site provide potential roosting habitat for bats within trees in the woodland and along field boundaries (hedgerows and mature treelines), as well as within buildings. Hedgerows and treelines within the Site also provide suitable commuting routes for bats, whilst the woodland and grassland areas provide potential foraging habitat.

Otter and water vole - Stock brook towards the west of the Site was considered unsuitable for water vole given that it was completely over-shaded with little channel or bank vegetation. However it is possible that otter may use the watercourse for foraging or commuting, with potential for otter to shelter within woodland habitats. The brook flows into the River Wid north of the Site which further increases the suitability for this species.

Birds – nesting birds are likely to be present within the hedgerows, woodlands and trees, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Gvien the small size of fields, and presecne of surrounding trred habitats, it is unlikely that ground nesting birds will be present.

Given the high levels of management across parts of the Site and lack of large open habitat across the remainder of the Site, it is considered unlikely that farmland species such as brown hare or ground nesting birds such as skylark or grey partridge would be present. In addition, given the low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present, although areas of grassland with greater species richness and woodlands may support a more diverse species assemblage than other habitats.

No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.

Ecological Appraisal

Designated Sites	No Nationally or Internationally designated Sites are present within the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Norsey Wood LNR and SSSI is located 230 metres to the south-west of the Site. It is designated given the presence of several rare and notable plant species. It also supports bats and dormouse. Any new development could result in impacts on the LNR/SSSI including increased recreation pressure and 'urban effects' such as flytipping and trampling. Forty Acre Plantation Local Wildlife Site (LWS) is located to the south east of the Site, with a small area inside the Site boundary. Norsey wood and Forty Acre Plantation are also identifed as ancient woodland which is subject to strict protection within national planning policy. Any new development could result in similar imapcts as identified above regarding increased recreational pressure, as well as impacts such as habitat loss, root compaction/disturbance, and contamination.
Habitats	The majority of habitats within the Site are largely relatively common and widespread habitats with relatively low intrinsic value. However, as a whole the Site supports a very diverse habitat mosaic ikely to provide opportunities for a wide range of wildlife. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, with one hedgerow within the site confirmed as species-rich. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Woodland is also listed as a Habitat of Principal Importance and should therefore be protected from development where possible. Ponds are similarly identified as an Essex BAP Priority Habitat, and along with the Stock Brook, would be particularly vulnerable to contamination impacts.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the the site, with waterbodies, hedgerows, woodland and areas of more species rich, rough grassland likely to be of highest value to a wide range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Reptiles within rough grassland habitats and adjacent hedgerows, woodland and scrub; • GCN associated with waterbodies as well as grassland, woodland and hedgerow habitats; • Badgers, particularly the presence of setts associated with woodlands and field boundaries; • Dormouse within the woodland or hedgerows; • Otter which may be use Stock Brook for commuting or potentially

	foraging, and adjacent woodland for shelter; • Bats roosting within woodland and/or hedgerow trees and buildings, and are likely to use the habitat mosaic including grassland fields and woodland/hedgerow edges for foraging, roosting or commuting habitat. • Nesting birds could also be affected by any removal of scrub or trees.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. Species surveys that may be required include reptiles, GCN, badger, dormouse, otter, bat and bird surveys subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, such as hedgerow, woodland or grassland surveys.

Avoidance, Mitigation and Enhancement Options

The habitat mosaic present within the site is likely to support a range of species, with woodland, hedgerow, mature trees, waterbodies and areas of more species rich grassland likely to be of greatest value particularly in the south of the site. Areas of such habitat, and the mosaic provided through the site, should be retained as far as possible, with pockets of lower value habitats as the focus for development. This includes improved and semi-improved grassland habitats in the north of the Site.

Best practice construction methods as detailed within a Construction and Environmental Management Plan or similar, should be followed to protect retained habitats (including waterbodies and adjacent/nearby designated sites), with guidance suggesting a 15m buffer should be maintained adjacent to ancient woodland.

New development would also result in an increase in recretational pressure and therefore mitigation should include measures to protect designated sites and retained habitats. Options could include fencing or native scrub planting along woodland edges to deter access, and the provision of high quality natural greenspace and recreation land as an alternative resource to sensitive habitats. This may also require enhanced management of nearby designated siotes to increase their robustness to recreational pressure.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Mitigation to protect dormouse including avaoiding the removal or woodland and hedgerows and minimising habitat severance. Were habitat removal is required, vegetation management or translocation of dormouse to a previously prepared receptor site under a NE licence may be required;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any

LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The network of woodland, hedgerows and other mature habitats within the Site are high value habitats and important in terms of retaining connectivity through the Site with further similar habitat in the vicinity. Ancient woodland is a particularly sensitive habitat and therefore although woodland within the Site is not listed on the Ancient Woodland Inventory it may still be of ancient character. Areas of highly managed grassland within the Site, such as horse paddocks or grazing land towards the north-west are of lower value. It should be noted however that any development within these areas still has the potential to cause impacts on wildlife, in particular causing fragmentation of habitats, and lighting impacts. This may be of particular importance to species such as badger which may use these habitats for foraging and commuting through the Site or bats which may be using the hedgerows and other habitats for roosting, commuting and foraging. Any proposals must be informed by detailed ecological survey, to inform avoidance and mitigation of impacts. In particular, proposals should seek to avoid fragmentation of habitats and retain ecological connectivity through the site, in particular as provided by Stock Brook and the network of hedgerows and woodland.

The Site supports a diverse habitat mosaic likely to be of value to a range of wildlife, with the south of the Site in particularly supporting valuable woodland and grassland habitats. A number of designated sites, including ancient woodland, are recorded in the area.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any development is focused on those parts of the Site with reduced ecological value, including grassland habitats in the north of the Site.

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows, trees and woodland.

Areas of habitat are retained and enhanced to ensure adequate mitigation can be delivered for those areas lost, for example with areas of greatest habitat diversity retained such as the southern part of the Site.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

Specifically, the potential for increased recreational pressure on retained and designated habitats is considered and appropriate mitigation measures are implemented.

Basildon Borough Council Ecology Surveys

Figure 23.1: Phase 1 Habitat Survey: Site 20- Land North East of Potash road

- Site Boundary
- Target note
- Running water
- Intact hedge (species-poor)
- Hedge with trees (species-poor)
- Broadleaved woodland (semi-natural)
- Neutral grassland (semi-improved)
- Improved grassland (no direct access)
- Improved grassland
- Poor semi-improved grassland/Broadleaved scattered trees
- Standing water
- Private residence

LUC

Map Scale @ A3: 1:4,300

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

24 Site 21: Land South of Wickford, Wickford

Survey Site	Site 21	Location	Wickford

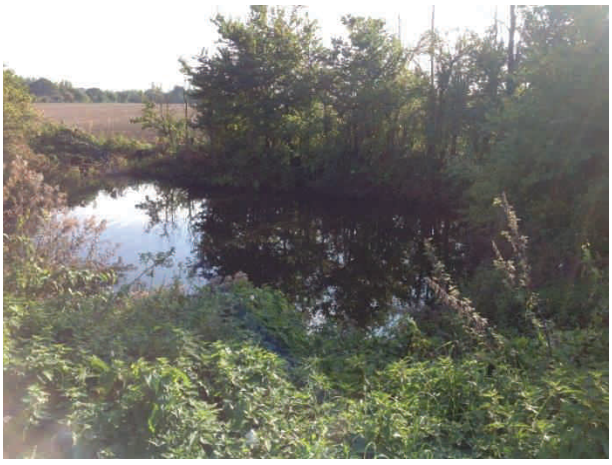
Site Overview

The Site is located to the south-east of Wickford. It is bordered to the north by residential properties, to the north-east by a railway line, to the east and west by agricultural land and by the A127 in the south.

The Site comprises largely agricultural land, the majority of which is arable. Small areas of pastoral land are also located within the Site mostly grazed by horses. The central part of the Site comprises the Wick Country Park, an area of public open space popular with dog walkers.

Site Photographs

Pond to the east of the Site



View of arable habitat in the south of the Site

Horse paddocks to the south-west of the Site

Wick Country Park LWS

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following Local Wildlife Sites have been identified within 1km of the Site:

The Wick County Park – recently created park supporting a range of habitats including woodland, rough grassland and ponds. Also supports the Essex red data list species flattened meadow-grass (within the central part of the Site); and

Home Farm Meadow –unimproved grassland (within the southern part of site),

Species records

The following records of protected and notable species have been identified within the Site boundary:

Adder	House Martin
Blue Tit	Linnet
Common Lizard	Noctule Bat
Common Pipistrelle	Pied Wagtail
Dunnock	Redwing
Eurasian Badger	Reed Bunting
Fieldfare	Robin
Goldfinch	Slow-worm
Grass Snake	Smooth Newt
Great Crested Newt	Swallow
Great Spotted Woodpecker	Wren
Great Tit	Yellow Wagtail
Green Woodpecker	

Habitat Description (see Figure 24.1)

Wick Country Park

Habitats within the Country Park included broadleaved plantation woodland, poor semi-improved grassland, ponds and running water.

Broadleaved Plantation Woodland

Broadleaved plantation woodland was noted around the periphery of the Park, and also within a large area within the north-west of the Park. Around the periphery the woodland was semi-mature and supported species such as ash, rowan, lime, oak, field maple, hawthorn, blackthorn, rose, dogwood and spindle. Such species were all frequent to abundant. The ground flora was sparse but where present was dominated by cow parsley.

In the north-west of the Country Park the woodland was also semi-mature but of a more open character, and dominated by ash with occasional oak. Ground flora included grassland species as discussed below.

Poor Semi-improved Grassland

Poor semi-improved grassland was recorded throughout the centre of the Country Park where it was dominated by perennial rye-grass with abundant cock's-foot, false oat-grass and white clover. Common daisy and bristly ox-tongue were frequent. Vetch *Vicia* sp. and vetchling *Lathyrus* sp. were occasionally present. The grass was mown to a short length, however there were some longer sections, particularly to the margins of the open space, in the vicinity of the woodland edges.

Running Water

Running water was noted in the form of a small brook which ran through the Country Park from north-east to south. The banks of the brook were overgrown with tall ruderal vegetation including greater willowherb.

Standing Water

The following ponds were noted within the Country Park:

A large fishing lake in the south of the Country Park had a central island and little aquatic vegetation.

A balancing pond was present to the west of the larger lake and was overgrown by common reed;

A number of smaller ponds, including one which was very overgrown with only shallow water.

A ditch linking the fishing lake with the balancing pond in the east of the site was dry at the time of survey.

Habitats within the Wider Site

Arable

Arable was the dominant habitat type within the remainder of the Site. The fields has been ploughed and drilled at the time of the survey, and supported no vegetation. Field margins where present were cut short and supported improved grassland.

Residential Properties

A number of residential properties with private gardens were noted around the periphery of the Site. No access was available to survey these properties.

Buildings and Hardstanding

A large industrial estate east of the Country Park comprised stables and farm storage buildings as well as industrial buildings and hardstanding.

Improved Grassland

Improved grassland was located within numerous horse paddocks surrounding the Industrial Estate to the east of the Country Park. The grassland was dominated by perennial rye-grass and other common and widespread species. A further small area of improved grassland was noted in a playing field in the north-west of the Site.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in a small area to the south of an arable field the north-west of the

Site. The grassland had a long, tussocky structure and was dominated by false oat-grass, with frequent bristly ox-tongue, occasional cow parsley, greater willowherb, and spear thistle. Teasel was present but rare.

A further small area of poor semi-improved grassland was recorded to the north-west of the Country Park car park. Here the grassland was dominated by cock's-foot and false oat-grass. Locally frequent nettle, abundant creeping thistle, occasional bristly ox-tongue, hogweed and cow parsley were all recorded. Black horehound, teasel and dock *Rumex sp*. were all present but rare.

Semi-improved Neutral Grassland

Semi-improved neutral grassland was noted within a small paddock in the north-west corner of the Site. The grassland was mostly of a short length, however it did support some areas which were longer and more tussocky. The grassland was dominated by cock's-foot and perennial rye-grass with abundant creeping bent and meadow buttercup, frequent red clover, locally frequent tufted hair-grass, occasional wild carrot, knapweed and sweet vernal grass. Teasel, common mouse-ear, bristly ox-tongue and ragwort were all present but rare. Semi-improved grassland was also noted to the south of the Country Park where it was again grazed by horses and supported similar species.

Semi-Natural Broadleaved Woodland

Semi-natural broadleaved woodland was noted immediately west of the industrial estate.

Broadleaved Plantation Woodland

An area of broadleaved plantation woodland was noted in a band bordering an arable field the west of the Site. The woodland was semi-mature and comprised similar species to those recorded within the Country Park. The ground flora was dominated by common fleabane.

Dense Scrub

Dense scrub dominated by hawthorn was recorded within an overgrown garden in the north-western corner of the Site.

Hedgerows and Treelines

Intact and defunct hedgerows were present throughout the Site. These were all identified as species poor and included a mixture of hawthorn, blackthorn and elm. Mature oak trees were also noted throughout the majority of hedgerows. Several Leyland cypress hedges were also noted to the east and south of an industrial estate east of the Country Park.

Fauna

Potential was identified for the following protected species within the Site:

Great crested newt – Although arable habitat is considered sub-optimal for GCN, several grassland fields capable of supporting this species were recorded within the Site, with the Country Park providing the majority of suitable habitat. Woodland and a network of hedgerows within the Site providing connectivity through the Site along with potential sheltering, hibernating and foraging opportunities. GCN have been confirmed within the Country Park, and several ponds outside of the Park also provide potential aquatic habitat for this species.

Reptiles –Localised areas of grassland throughout the Site were suitable to support common and widespread reptiles (in particular, common lizard, grass snake and slow worm).

Badger –arable and grassland habitats present on the site provide suitable foraging habitat for badger, whilst woodland within the site and banks around field margins provide suitable opportunities for sett building. Several badger setts were noted during the Phase 1 Habitat Survey.

Bats – mature trees within The Site provide potential roosting habitat for bats, including those within hedgerows and woodland, as do buildings. Hedgerows, treelines and the brook also provide suitable commuting routes for bats, whilst the woodland and grassland areas along with waterbodies provide potential foraging habitat.

Riparian mammals – the brook within the Site provides suitable habitat for otter and water vole.

Birds – nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The fields within the Site may also support ground nesting species, although these are unlikely to be present within the Country

Park given recreational disturbance. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development. Brown hare – arable and grassland habitats within the Site have the potential to support this species, however due to disturbance from dog walkers, it is considered unlikely that this species would be present within the Country Park. Although woodland and hedgerows were recorded within the Site, these were not considered suitable for dormouse being relatively species-poor, relatively young (in terms of woodland) and with poor connectivity to any larger areas of suitable woodland in the wider area. Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present. Himalayan balsam was noted on the banks of a stream abutting the eastern Site boundary.	
Ecological Appraisal	
Designated Sites	No nationally or internationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. The Wick Country Park and Home Farm meadow LWS's lie within the Site. There is therefore the potential for impacts these sites including habitat loss, contamination (run-off, smothering and dust deposition) and increased levels of recreational pressure and 'urban effects' such as flytipping and trampling due to an increase in the local population.
Habitats	Habitats within the Site are largely relatively common and widespread habitats with relatively low intrinsic value. Waterbodies such as the stream running throught the Site and ponds within the Country Park have the potential to support protected species such as water vole, otter and GCN. In addition they provide connectivity throguh the Site, whilst ponds are an Essex BAP Priority Habitat. Development may result in loss of this these habitats, and severance of connectivity. Other impacts may include contamination with contamination of the brook potentially causing off-site impacts through contamination as discussed above. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Woodland is also a Habitat of Principal Importance, although those on the Site are of reduced value given their relatively recent creation. Although arable field margins are also a Priority Habitat[7] this definition only includes those which are managed specifically for the benefit of wildlife. The field margins, where present, were closely mown and therefore they do not meet the criteria as described within the BAP.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the the site, with hedgerows, waterbodies and woodland habitats likely to be of highest value to a wide range of species. The grassland, bare ground and arable habitats are likely to be of lower value for species, however there is some potential for species such as brown hare or farmland/ground nesting birds to be using these habitats for shelter, depending on the level of

management (the potential for such species to be present would increase should the field margins and grasslands develop a longer, more tussocky structure).

Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include:

- Reptiles within rough grassland habitats in particular;
- GCN associated with the Country Park waterbodies, as well as grassland, woodland and hedgerow habitats throughout the Site;
- Badgers, particularly the presence of setts associated with woodlands and field boundaries;
- Bats roosting within woodland and/or hedgerow trees and buildings. Bats may also use the hedgerow network across the Site for foraging and commuting, although the site is likelty to be of relatviely low value given the dominance of agricultural habitats;
- Otter or watervole which may be associated with the stream running through the Site;
- Nesting birds could also be affected by any removal of scrub or trees, or loss of open grassland/arable habitat;
- Brown hare using open grassland and arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. Species surveys may be required in particular for reptiles, GCN, badger, bats, otter/water vole, hare and birds subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, in particular hedgerow surveys.

Avoidance, Mitigation and Enhancement Options

Development should avoid impacts on designated LWS's wherever possible, with woodland, waterbodies, hedgerows and mature trees likely to be of greatest value across the Site.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect the LWS's, retained habitats and in particular waterbodioies, including from runoff, dust deposition and root compaction.

New development would also be likely to result in an increase in recretational pressure on designated Sites and retained habitats and mitigation should include measures to guard against this. Options could include fencing sensitive areas such as those containing waterbodies or woodland to deter access, upgrading of footpaths in order to discourage unrestricted access within the Country Park, and habitat enhancment to increase robustness. There may also be potential to increase the size of the Country Park to provide additional open space.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the

wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Enhancement of habitat outside the potential development area (potentially within the Country Park) to provide additional opportunities for species impacted by the proposals, such as brown hare;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

For the most part, the Site is of relatively low ecological value with hedgerows within agricultural habitats likely to be of greatest value. In addition, the Site includes two LWS's which provide wildlife habitat as well as accessible natural greenspace.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

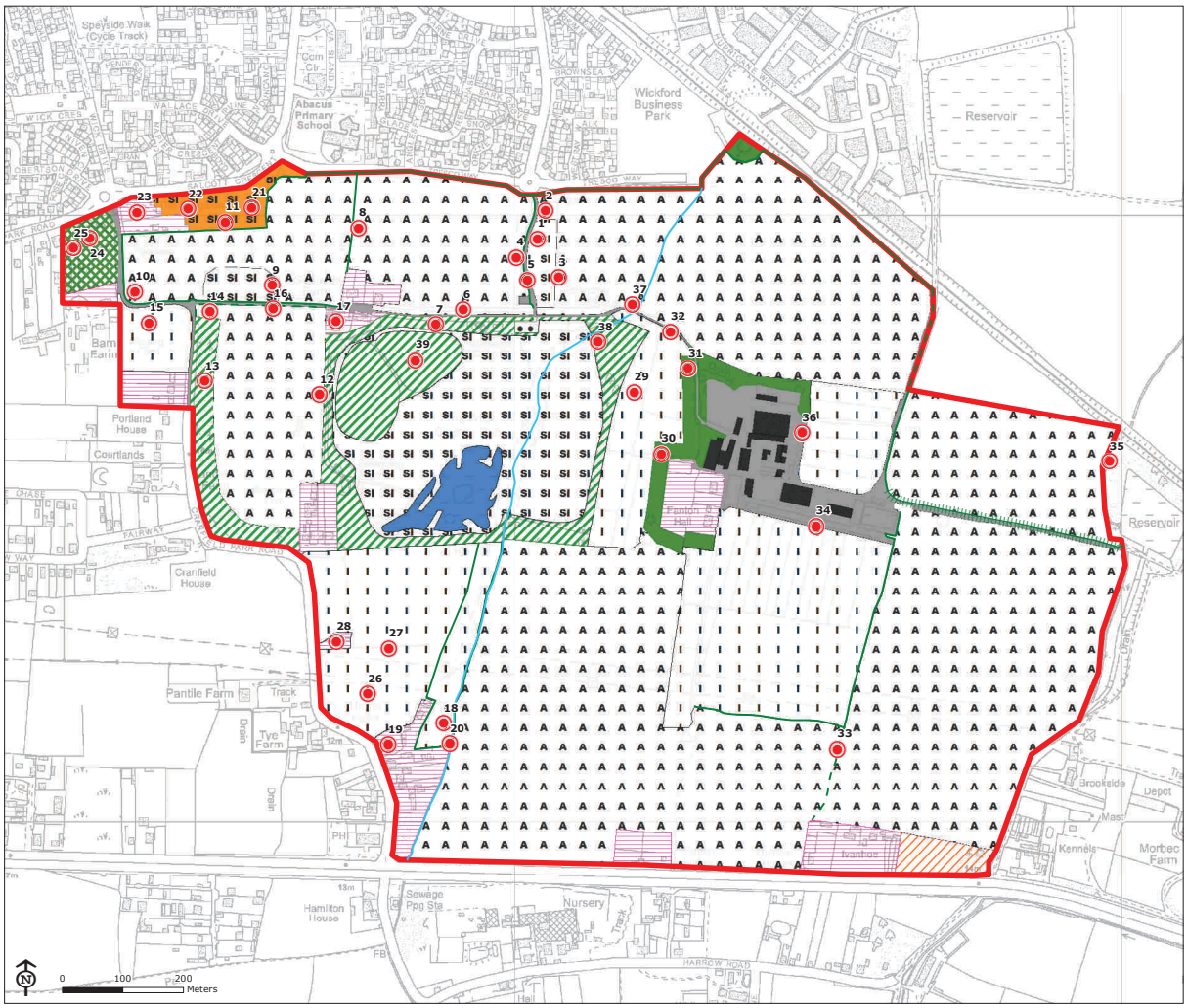
Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and a brook.

Measures are developed to avoid impacts on LWS's, including as a result of increased recreational pressure.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

To ensure impacts are avoided, it is recommended that the The Wick County Park and Home Farm Meadow LWS's are excluded from the proposed development site boundary as well as areas of adjacent grassland to provide additional areas for mitigation and to prevent these designated sites being encircled by development (see **Figure 24.2**).



CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

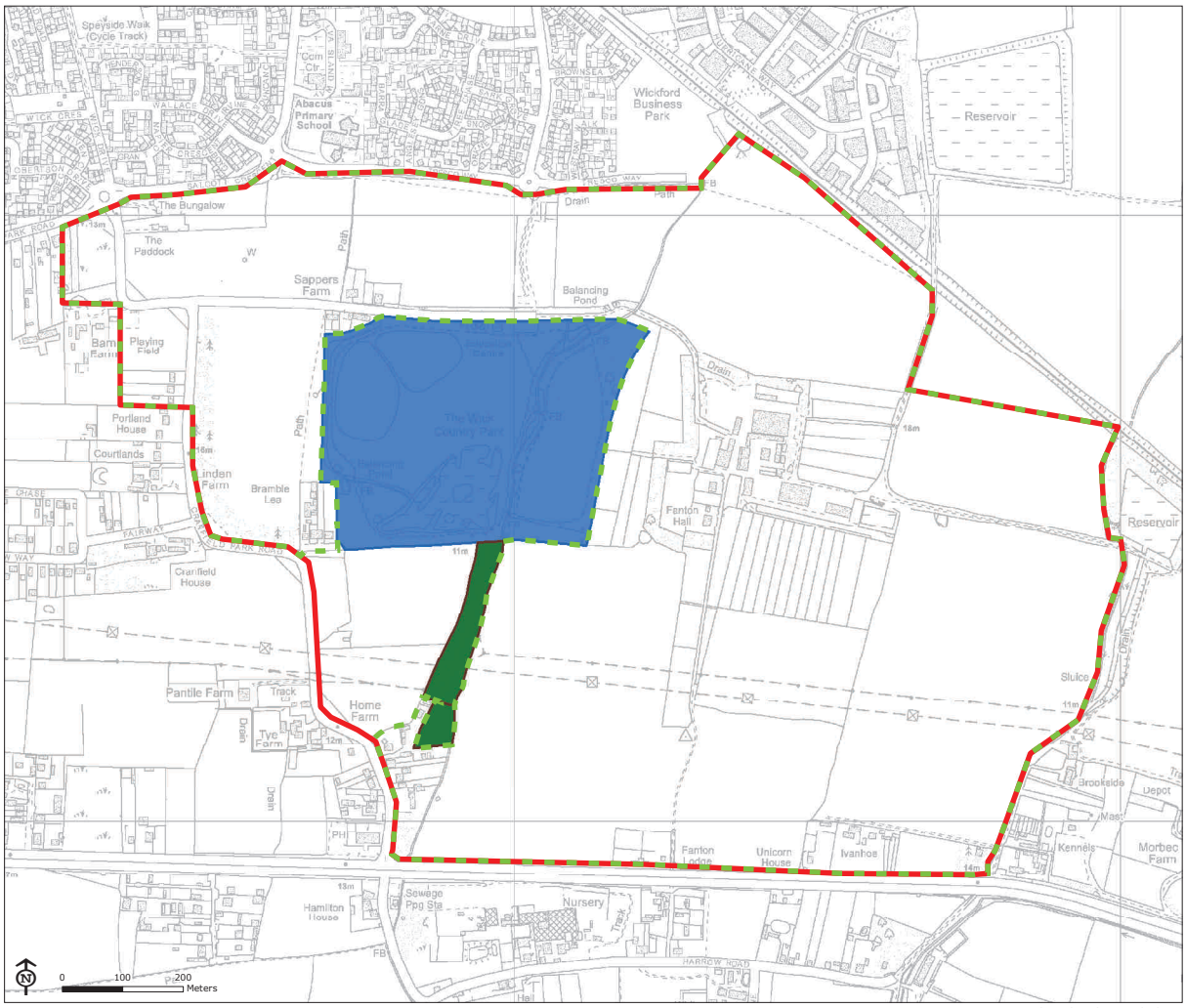
Basildon Borough Council Ecology Surveys

Figure 24.1: Phase 1 Habitat Survey: Site 21- Land South of Wickford

- Site Boundary
- Target note
- Running water
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Broadleaved woodland (semi-natural)
- Broadleaved woodland (plantation)
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)
- Improved grassland
- Poor semi-improved grassland
- Standing water
- Hardstanding
- Arable
- Buildings
- Bare ground
- No direct access
- Private residence

LUC

Map Scale @ A3: 1:6,100



CB:Green_C EB:Goosen_V LUCLON 6485-01_004_Suggested_site_boundaries 22/12/2015

Basildon Borough Council Ecology Surveys

Figure 24.2:
Phase 1 Habitat Survey:
Site 21- Land South of Wickford

- Site Boundary
- Suggested amendments to site boundary
- BAP Priority Habitat
- Local Wildlife Site

Map Scale @ A3: 1:6,100

LUC

25 Site 22: Land to the West of Lower Dunton Road (North)

Survey Site	22	Location	Dunton

Site Overview

The Site is situated to the north of Dunton and is bordered by the A127 to the north and a mixture of agricultural land and horse paddocks to the south, west and east.

The Site is largely composed of agricultural land, horse paddocks and residential/farm buildings.

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

Local Wildlife Sites located in the wider area include:

Southfields Washlands – open habitat mosaic habitat (110m east).

Langdon Complex– woodland and wetland habitats, including GCN and reptile populations (630m south)

Gravelpit Wood - ancient deciduous woodland- (225m north-east);

St Margarets Wood and Lane – ancient woodland and valuable wildlife corridor along the course of an ancient track-way (780m north)

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 25.1)

Semi-improved Grassland

Semi-improved neutral grassland was observed in the north-east corner of the Site. The grassland had a tall sward height and appeared unmanaged. Species included perennial rye grass, cock's-foot *a*, dock *Rumex sp*, fat hen, common daisy and vetch *Vicia sp.*

This habitat was also recorded adjacent to Brookman's Farm. The grassland was rank in structure with species, such as perennial rye grass, dock *sp* and vetch *sp*.

Poor Semi-improved Grassland

Poor semi-improved grassland was recorded in various locations around the site.

An area to the south ('The Paddocks') was predominately used as horse paddocks and had a short sward height. Species included perennial rye grass, white clover, creeping buttercup , common daisy and creeping thistle.

An area to the east included areas grazed short by horses, and areas with a rougher, tussocky structure. The grassland comprised of perennial rye grass, couch, Timothy, dock, creeping buttercup, vetches, great

willowherb, bristly ox-tongue and common ragwort.

Rough poor semi-improved grassland was also noted to the north of Brookman's Farm, with areas also along the edges of the field boundaries in the north of the Site. These were used by farm vehicles to access the land. Species included perennial rye grass, cock's-foot, red fescue, creeping buttercup and bristly ox-tongue.

Improved Grassland

Improved grassland was identified in the south of the Site, adjacent to the Old Rectory. The grassland had a uniform structure with a short sward height. Species present included perennial rye grass, creeping thistle, Yorkshire fog and creeping buttercup.

Scrub

Scattered scrub was recorded along the raised ground surrounding the farm buildings in the north-west of the site and to the north and east of Clyde Lodge. Species recorded included bramble, hawthorn, oak regeneration, blackthorn, ash, and birch *Betula sp*.

Tall Ruderal Vegetation

Tall ruderal vegetation was observed along the raised ground surrounding the farm buildings in the north-west of the site and adjacent to Brookman's Farm. Species included bristly ox-tongue, common fleabane, great willowherb and common nettle.

Hedgerows and Treelines

Hedges were recorded throughout the Site. Species included blackthorn, hawthorn, elm *Ulmus sp*, field maple *Acer campestre*, dog rose, bramble and elder.

Mature oak treelines were common within the agricultural land, with occasional scattered oak indicating the presence of historic field boundaries, whilst a treeline adjacent to a hotel comprised poplar *Populus sp*.

Arable

The site was dominated by arable habitat which was ploughed, resulting in bare ground.

Buildings

The buildings within the Site were associated with farms, residential housing and a hotel.

Other Habitats

Ditches were present within the Site with dry ditches located to the west of Lower Dunton Road, and wet ditches with abundant vegetation noted in the north east corner of the Site.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great Crested Newt – there are a number of water bodies identified within 500m of the Site (as identified from OS base mapping; further investigation would be required), while wet ditches on the site may provide breeding opportunities for GCN. The hedgerows, scrub and areas of rough grassland may also provide potential terrestrial habitat for GCN.
- Reptile – there is potential for reptiles to be present in areas of rough grassland, tall ruderal and scrub through the Site, with field margins also providing opportunities for these species.
- Badgers – the mosaic of hedgerows and open grassland/arable habitat provides suitable habitat for sett building and foraging through the Site.
- Bats – the mature trees and buildings are likely to provide suitable roosting habitat for bats. Equally, there is potential for bats to forage and commute across the landscape.
- Water vole – the wet ditches in the north-east of the Site provide suitable habitat for these species, although given the relatively small area of habitat it is unlikely they would be present (although this cannot be ruled out at this stage).

- Birds –nesting birds are likely to be present within the hedgerows, trees and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. The larger fields may also support ground nesting species. However, use of the fields by wetland/wading birds is considered unlikely given the vicinity to roads and built development.
- Brown hare – the mosaic of grassland and arable land may be suitable for brown hare to forage and shelter within the Site. Their presence may be affected by the levels of disturbance from farming methods and livestock.

The presence of dormouse is considered unlikely due to a lack of large areas of woodland in the vicinity and given the relatively species-poor hedgerow network.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated Sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Two LWSs are located in relatively close vicinity to the site, although seperated from the site by roads and built development to the east, and arable farmland to the west. Therefore impacts such as contamination are considered unlikely, although increased residenual development could result in increased recreational pressure on the LWSs. This may affect the ancient woodland to the west in particular.
Habitats	The habitats identified within the Site are common and widespread, and were generally considered of relatively low ecological value. Hedgerows are listed as a Essex Biodiversity Action Plan Priority Habitat[2], however there were no hedgerows within the site that were identified as potentially species-rich, and they are therefore less likely to qualify as 'important hedgerows' under the Hedgerow Regulations (further assessment would be required). The hedgerows provide wildlife habitat in their own right, and ecological connectivity through and around the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows, open grassland and scrub habitats likely to provide opportunities for a range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • GCN potentially breeding within wet ditches and ponds in the wider area, with terrestrial opportunities provided on the site by rough grassland, scrub, tall ruderal and hedgerows/treelines. • Reptiles present within rough grassland, as well as hedgerows, scrub and tall ruderal habitats. • Potential for badger setts within hedgerows, scrub and woodland, and foraging through the site.

	• Bats roosting within mature trees and buildings, and foraging/commuting through the site. • Water vole associated with wet ditches (although this is considered unlikely). • Nesting birds within hedgerows, scrub and arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, bats and birds subject to proposals (with further consideration of the potential for water vole). More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows and trees within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

Overall the site was considered to be of relatively low ecological value, with arable fields and horse grazed pastures of particularly low ecological value. The network of hedgerows, treelines, mature trees and ditches provided some potentially valuable habitat for wildlife as well as ecological connectivity through the site.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows, treelines mature trees and ditches.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

Basildon Borough Council Ecology Surveys

Figure 25.1: Phase 1 Habitat Survey: Site 22- Land to the West of Lower Dunton Road (North)

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Dry ditch
- Broadleaved scattered trees
- Neutral grassland (semi-improved)
- Neutral grassland (semi-improved)/Other tall herb and fern (non ruderal)/Scrub (scattered)
- Improved grassland
- Poor semi-improved grassland
- Poor semi-improved grassland/ Scrub (scattered)
- Hardstanding
- Arable
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:4,700

26 Site 23: Land to the West of Lower Dunton Road (South), Dunton

Survey Site	23	Location	Dunton

Site Overview

The Site is situated to the north of Dunton and is bordered by farmland to the north, a train line to the south, Dunton Hills golf course to the west and Lower Dunton Road to the east.

The Site is largely composed of farmland, horse paddocks, a dog kennels and residential/farm buildings.

Access was not permitted to the north eastern part of the Site.

Site Photographs

View of grassland in the south

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. No nationally designated sites are located wihtin 1km.

Local Wildlife Sites located within 1km include:

Southfields Washlands LWS – – mosaic of habitats supporting several red data book species including blue fleabane, yellow-wort and kidney vetch (600m east).

Langdon Complex LWS – woodland and wetland habitats, including GCN and reptile populations (250m south).

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 26.1)

Semi-improved grassland

Semi-improved grassland was recorded in the south-east corner of the site. It comprised rough grassland with a mown path around the outside. Species included dominant perennial rye grass, abundant cock's-foot, frequent creeping thistle and creeping buttercup and ragwort, occasional dock *Rumex sp*, and rare broad-leaved willowherb. A field in the north of the Site displaying evidence of ridge and furrow was also noted to support semi-improved neutral grassland with a species composition similar to other areas within the Site.

Improved grassland

Improved grassland was present south of Church Road and was used to graze cattle. The grassland was short with areas of poached ground near to gates. Species included dominant perennial rye grass, abundant white clover, locally frequent vetch *Vicia sp*, occasional creeping buttercup and rare bristly ox-tongue. Further areas of improved grassland were also noted within the majority of fields north of Church Road.

Amenity grassland

Amenity grassland was associated with the dog kennels in the south-east corner of the site. Species included dominant perennial rye grass, abundant white clover, frequent creeping buttercup, and occasional dandelion and cock's-foot.

Scrub

Dense scrub was recorded either side of the waterbody in the south-east of the site. Species present included dominant blackthorn, abundant common nettle, locally abundant great willowherb, frequent crack willow, occasional oak, elder and hawthorn, and rare ash. Dense scrub was also noted along the boundary of the semi-improved grassland and was dominated by blackthorn, abundant bramble and frequent hawthorn.

Scattered scrub was noted in the south-east corner and included oak regeneration and blackthorn.

Hedgerows and Treelines

A small number of hedgerows were found within the site and comprised of blackthorn, hawthorn and bramble.

Buildings

Buildings within the site included residential/farm buildings and building associated with the dog kennels.

Other habitat

A pond and wet ditches were recorded in the south of the site. The ditch to the east was heavily vegetated along the banks, whilst the pond and the ditch supported only sparse vegetation.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great crested newt – there is potential for GCN to be present within the site, with a single pond and wet ditches providing breeding opportunities, and other ponds recorded within the 500m of the Site (although relatively isolated from the site by roads and residential development. There was limited potential terrestrial habitat within the Site, with optimal areas comprising relatveily small patches of longer grassland, and scrub habitats in the south east.
- Reptile – the is low potential for reptiles to be present within the site with grassland habitats subject to relatively high levels of management and generally without sufficient shelter for reptiles.
- Badgers – there is potential for badgers to forage and commute through the Site, although habitats suitable for the establishment of badger setts were relatively limted (for example, sctrub habitats in the south east of the site).
- Bats - there is potential for bats to forage and commute across the Site. There is also potential for bats to roost in the buildings within the Site.
- Birds –nesting birds are likely to be present within the hedgerows, including species of principle

	importance and local BAP priorities such as song thrush and farmland birds. Use of the fields by wetland/wading birds and ground nesting birds is considered unlikely given the relatively small size of the fields and vicinity to the settlement and associated disturbance. Brown hare are unlikely to be present given the nature of the fields, their relative isolation by roads, and given the management of the fields. The wet ditches present on Site were considered sub-optimal for water vole given a lack of connectovity to a wider network of waterbodies and a lack of suitable vegetation for foraging and shelter. Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present. No invasive species were noted on the Site.
Ecological Appraisal	
Designated Sites	There are no Nationally/Internationally designated Sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. The are no LWS within the site. There are unlikely to be significant impacts to nearby LWS's from offsite impacts, such as contamination due to presence of roads between the LWS's and the site.
Habitats	The habitats identified within the Site are common and widespread, and were generally considered of relatively low ecological value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Ponds are also identified as Essex Biodiversity Action Plan Priority Habitat and could be affected by habitat loss as well as contamination during works. Areas of more species-rich semi-improved grassland may be of increased value compared to other areas of grassland, with an area in the north east of the Site supporting ridge and furrow grassland which indicates low levels of agricultural improvement (without ploughing although fertilisers etc. may still have been applied).
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows, open grassland and scrub habitats likely to provide opportunities for a range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • GCN breeding within the ponds and wet ditches, and using relatively small areas of terrestrial habitat for foraging and shelter. • Reptiles present within localised areas of grassland and associated hedgerows and scrub. • Bats roosting within buildings, and foraging/commuting through the

	Site. • Nesting birds within hedgerows and scrub.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, bats, and birds. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect waterbodies and hedgerows within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

Overall the site was considered to be of relatively low ecological value, with improved pastures of particularly low ecological value. Areas of more species-rich grassland may provide some increased value, including an area of ridge and furrow, although the network of hedgerows was relatively week.

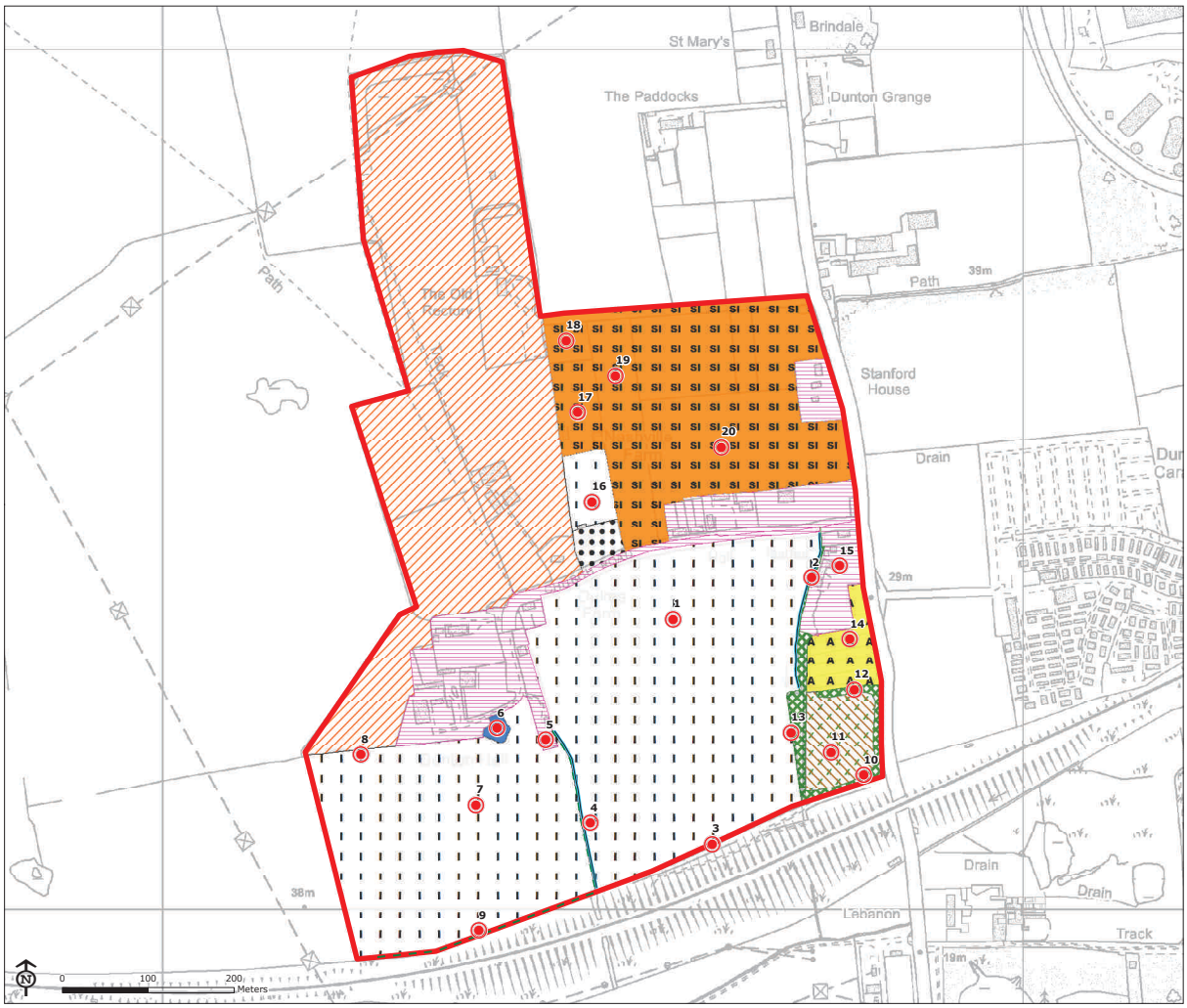
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain or enhance ecological connectivity through the site, whilst areas of more species-rich grassland and ridge and furrow may provide greatest opportunities for the delivery of ecological mitigation and enhancement.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 26.1: Phase 1 Habitat Survey: Site 23- Land to the West of Lower Dunton Road (South)

- Site Boundary
- Target note
- Defunct hedge (species-poor)
- Wet ditch
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Improved grassland
- Standing water
- Amenity grassland
- Bare ground
- No direct access
- Private residence

LUC

Map Scale @ A3: 1:4,300

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 04/01/2016

27 Site 24: Land to the East of Lower Dunton Road, Dunton

Survey Site	24	Location	Dunton

Site Overview

The Site is situated to the north of Dunton and is bordered by a horse paddocks to the north, a train line to the south, Lower Dunton Road to the west and residential development to the east.

The Site is largely composed of agricultural land, fields currently and formerly grazed by livestock, dense scrub and residential properties.

Site Photographs

View of field in the south, adjacent to Lower Dunton Road

View of field north of Dunton Caravan Park

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. No nationally designated sites are located within 1km of the Site.

Local Wildlife Sites located in the wider area include:

Langdon Complex – woodland and wetland habitats, including GCN and reptile populations (75m south).

Southfields Washlands – – mosaic of habitats supporting several red data book species including blue fleabane, yellow-wort and kidney vetch (100m east); and

Gravelpit Wood - ancient deciduous woodland- (800m north).

Species Records

Records of protected and/or notable species identified within the Site included:

Common lizard

Habitat Description (see Figure 27.1)

Semi-improved grassland

Semi-improved grassland was recorded in the centre. The disused field was formerly used for grazing cattle and had a relatively short sward height. Species included dominant perennial rye grass, abundant Yorkshire fog, frequent vetch *Vicia sp*, locally frequent red clover, occasional bristly ox-tongue, creeping buttercup and rare ragwort.

Poor semi-improved grassland

Poor semi-improved grassland was noted to the south of the site and was grazed by livestock, including cattle and sheep. The grassland was short, as a result of grazing with small areas of tall ruderal. Species included perennial rye grass, Timothy, bent-grass *Agrostis sp,* crested dog's-tail cock's-foot, wall barley and creeping buttercup.

Scrub

A band of dense scrub was observed along the eastern boundary and through the centre of the site. The shrub layer included dominant hawthorn, abundant bramble, blackthorn, frequent field maple, occasional oak, lime and rare crab apple whilst the ground flora comprised of abundant ivy, perennial rye grass, frequent white clover and occasional red clover.

Tall Ruderal Vegetation

Tall ruderal vegetation was recorded adjacent to a residential building in the centre of the site on the western boundary. The tall ruderal was noted with scattered scrub and including the following species; dominant common nettle, abundant creeping thistle, frequent bramble, field bindweed, locally frequent great willowherb, and occasional ash, blackthorn, elder and bristly ox-tongue.

Hedgerows and Treelines

Hedgerows were present along the boundaries of fields in the north and south of the site. The hedgerows ranged from dense stock proof to defunct hedges with scattered trees, such as mature oaks. Species included blackthorn, hawthorn, elm, bramble and field maple.

Arable

The arable field in the north of the site had been recently ploughed at the time of the survey, resulting in a large area of bare ground.

Buildings

Buildings within the site were associated with residential properties.

Other habitat

A single dry ditch was noted in the south of the site and contained sparse vegetation.

Fauna

Potential was identified for the following protected species to be present within the Site:

Great Crested Newts – there are a small number of ponds that have been identified within 500m of the site (as identified from OS base mapping; further investigation would be required), with potential to support breeding GCN. Rough grassland, scrub and hedgerows through the Site provide opportunities for this species to forage, shelter and overwinter.

Reptile – conditions through much of the site were thought to be sub-optimal for reptiles due to the short grassland structure and bare ground. However, localised areas of rough grassland, including those with adjacent hedgerows and scrub, may provide suitable habitat for widespread and common species.

Badger – the mosaic of open grassland, scrub and hedgerows may provide potential foraging and sett building habitat.

Bats – the mosaic of open grassland, hedgerows and scrub may provide suitable foraging and commuting habitat for bats. Hedgerow trees and buildings within the site may also provide suitable roosting opportunities for bats.

Birds – there is potential for birds to use the hedgerows, scrub and trees for nesting, including priority species such as sogn thrush and farmland birds. The arable field and grasslands subject to reduced levels of grazing may suppirt ground nesting species, such as skylark, but use by wetland/wader species is unlikely given levels of disturbance.

Given the relatively low floristic diversity in general across the Site, and lack of other notable features, it is unlikely that notable species of invertebrate such as shrill carder bee would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. The are no LWS within the Site. There are unlikely to be significant impacts to nearby LWS's from offsite impacts, such as contamination due to presence of roads between the LWS's and the Site.
Habitats	The habitats identified within the Site are common and widespread, and were generally considered of relatively low ecological value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Although, scrub is not a notable habitat in its own right, it is likely to be of ecological value within the Site by providing important habitat for protected/notable species, as well as acting as a ecological corridor to the surrounding environment.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows, open grassland and scrub habitats likely to provide opportunities for a range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk

	of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Potential for GCN and reptiles to be associated with localised areas of grassland, hedgerows and scrub. • Potential for badger setts within hedgerows, and scrub and foraging through the site. • Bats roosting within mature trees and buildings, and foraging/commuting through the site. • Nesting birds within hedgerows, scrub and arable/grassland fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger and birds. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be proposed.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows and scrub within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

Overall the site was considered to be of relatively low ecological value, although hedgerows/treelines provided habitat and connectivity through the site, whilst the central area of grassland and scrub providing

more valuable habitat and connectivity through the centre of the site.

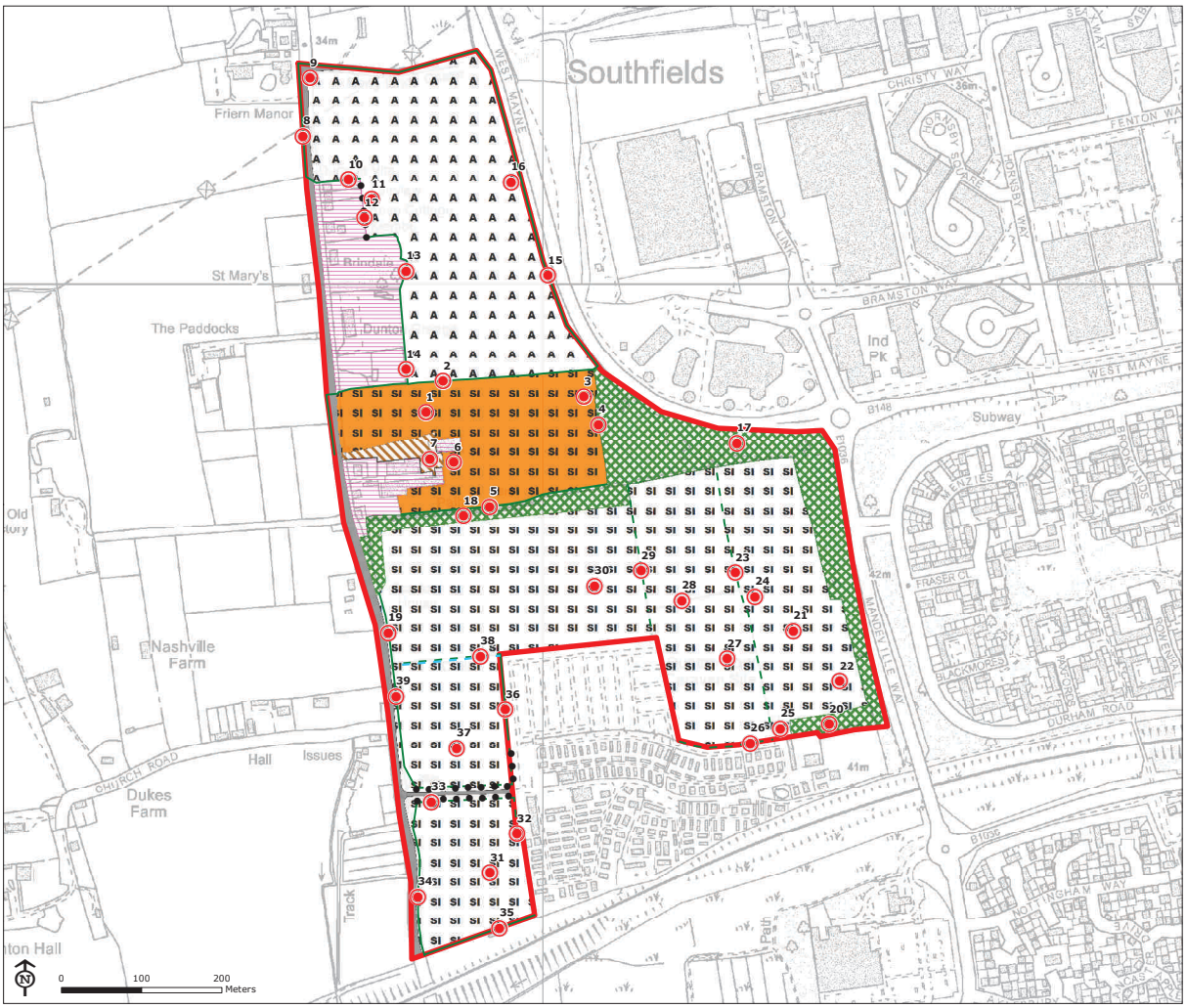
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines, with consideration of the retention and enhancement of the grassland and scrub habitats in the centre of the Site.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 27.1: Phase 1 Habitat Survey: Site 24- Land to the East of Lower Dunton Road

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Dry ditch
- Tree line
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)
- Poor semi-improved grassland
- Other tall herb and fern (ruderal)
- Hardstanding
- Arable
- Private residence

LUC

Map Scale @ A3: 1:4,600

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

28 Site 25: Land at Tompkins Farm, Basildon

Survey Site	Site 25	Location	Land at Tompkins Farm

Site Overview

The Site is located to the south of Basildon, with the Basildon Golf course adjacent to the north and north-east, the A13 trunk road to the south, Vange Primary school to the south-east and the A176 (Nethermayne) to the west.

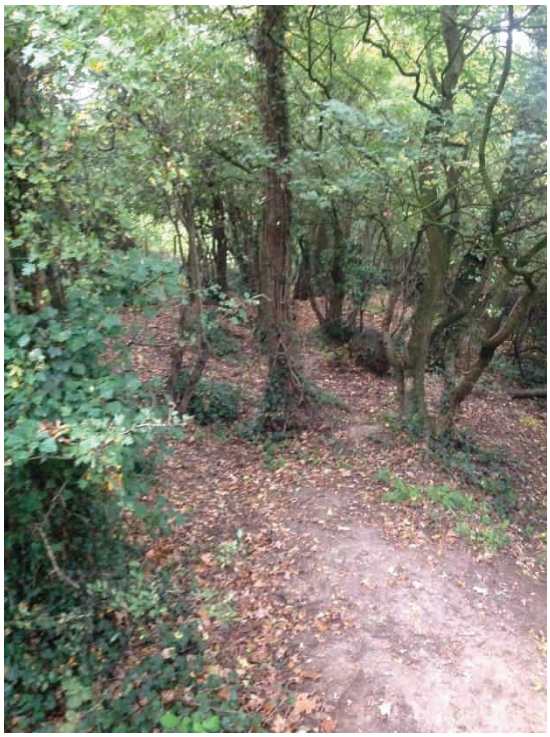
North of London Road, the Site comprises largely pastoral land laid out to pony paddocks, with small areas of scrub and woodland. A garden nurseries is located to the south of this area.

South of London Road the Site is also given over to pony paddocks, with All Saints Church in the central part of this area.

Site Photographs

View of pony paddocks in the centre of the Site

Woodland to the north-east of the Site



Potential veteran oak in the east of the Site

View of All Saints Church looking south

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated sites have been identified within 1km of the Site:

Basildon Meadows SSSI – unimproved herb-rich meadows (300m west); and

Vange and Fobbing Marshes SSSI – unimproved coastal grassland and associated dykes and creeks support a diversity of maritime grasses and herbs (600m east).

The following Local Wildlife Sites have been identified within 1km of the Site:

Tompkins Farm Meadow LWS - within the northern part of the Site, species rich lowland meadow, supporting spiny restharrow;

All Saints Grassland LWS - within southern part of the site, species rich lowland meadow supporting reptiles and the nationally scarce wasp spider;

Vange Hill and Golf – lowland meadows, scrub, and woodland supporting reptiles , and 60 nationally scarce invertebrate species, (abuts the Site to the north);

Nether Mayne Verges –species-rich grassland verges supporting important invertebrate assemblages (abuts the Site in the west);

Bells Hill Meadow LWS – lowland meadow supporting an important invertebrate assemblage including brown-banded carder bee and shrill carder bee (80m west)

Vange depot – covered reservoir supporting large population of green-winged orchid and important invertebrate assemblage including shrill carder bee (360m south);

Hawkesbury Grasslands – species rich grasslands. One of the only sites in Essex supporting corky-fruited

water-dropwort. Also supports important butterfly assemblage (400m south-west);

Hawkesbury Manor LWS – species rich grassland supporting green-winged orchid and important invertebrate assemblages including shrill carder bee, brown banded carder bee and glow worms (400m west);

Dry Street Pastures – species rich grasslands supporting scarce plants including adder's tongue fern and important invertebrate assemblages (890m west);

Vange creek marshes – coastal grazing marsh, supporting notable bird species and invertebrates including shrill carder bee (750m south-east).

Species records

Records of the following protected and notable species have neen identified within the Site:

Brown long-eared bat

Habitat Description (see Figure 28.1)

Semi-improved Neutral Grassland

The Site was largely dominated by semi-improved neutral grassland. To the north of London Road numerous pony paddocks and fields were dominated by perennial rye-grass with abundant cock's-foot, meadow-grass sp., meadow barley, locally abundant red clover, frequent red bartsia, spurge, bristly ox-tongue, occasional buttercup, dandelion, smooth hawks-beard, crested dog's-tail, timothy, white clover, doves-foot cranesbill, knapweed, cow parsley, meadow cranesbill, and wild carrot which were all present but rare. One paddock in the east of the Site was also noted to support spiny restharrow which was occasional (designated as the Tompkins Farm Meadow LWS).

To the south of London Road, a smaller number of horse grazed paddocks supported species including abundant crested dog's-tail, creeping bent, meadow barley and knapweed, locally frequent yellow vetchling, occasional red clover, wild mignonette and Yorkshire fog. Wild carrot, fleabane and rose were all present but rare.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in the north-east of the Site. Here the grassland was long and supported a dense thatch. The grassland was dominated by cock's-foot, with abundant false oat-grass and creeping bent. Ragwort was present but rare.

Semi-natural Broadleaved Woodland

A narrow band of semi-natural broadleaved woodland was noted in the north-east of the Site abutting the golf course. The woodland canopy was dominated by oak, with occasional black poplar and ash. The shrub layer was dominated by hawthorn and blackthorn, spindle, field maple and yew all present but rare. The ground flora was dominated by ivy with wood false brome, cow parsley and black bryony all present but rare.

A further area of woodland was noted along the western boundary of the Site. The woodland canopy was dominated by ash, with frequent elm and the understory was comprised of abundant oak and frequent elm regeneration. The ground flora was dominated by ivy.

In the south-east corner of the Site a small block of woodland comprised a canopy dominated by oak, with cedar present but rare. The shrub layer was dominated by hawthorn, with occasional privet, elder, field maple and bramble. The ground flora dominated by ivy, however other species such as lily *Lilium sp*. and male fern were recorded rarely.

Along the southern Site boundary an area of scrub graded into a small area of woodland to the south of the church. The canopy was dominated by oak and field maple. Regeneration of those species was also present in the understory, which was mostly comprised of hawthorn, blackthorn and elm. Bramble and rose were present but rare. The ground layer was bare.

Scrub

A large area of dense scrub was noted along the southern boundary of the Site and comprised hawthorn, blackthorn and elm which were all frequent. Bramble and rose were present but rare. The ground flora was

sparse.

Scrub dominated by blackthorn and scattered semi-mature trees including oak and Lombardy poplar was noted to the north of an area of semi-improved grassland, south of the golf course.

The largest area of scrub within the Site was located in the north-east where semi-mature scattered trees were also present. Blackthorn and hawthorn dominated, while bramble was abundant and rose and buddleia were present but rare. Scattered trees comprised frequent oak, occasional field maple, apple and pear. The ground flora dominated by ivy in the denser areas of scrub, however some open glades also supported grassland species such as cock's-foot, false oat-grass and creeping bent.

Hedgerows

Several intact hedgerows were present throughout the Site. These all appeared to be species poor and included a mixture of hawthorn, blackthorn and elm with occasional bramble. Mature oak trees were also noted throughout the majority of hedges, including some potentially veteran specimens. One hedge to the north of the Site boundary with Vange Primary school also supported scattered field maple and ash trees.

Buildings and Hardstanding

Buildings and associated hardstanding within the Site included:

All Saints Church to the south;

An industrial area to the south-west;

Farm buildings to the west; and

A garden nurseries immediately north of London Road.

Fauna

Potential was identified for the following protected species within the Site:

Great crested newt – The Site provides terrestrial habitat including long grassland scrub and woodland which are suitable to support GCN. The woodlands within the Site provided log piles and cracks and crevices in the ground providing opportunities for shelter, foraging and hibernation, with hedgerows providing similar opportunities and connectivity through the site. Several ponds were noted in the vicinity of the Site which may provide breeding habitat, with one potentially ephemeral pond located within the Site boundary.

Reptiles –the main area of the Site suitable for common and widespread reptiles (in particular, common lizard, grass snake and slow worm) was an area of poor semi-improved grassland on a large south-facing bank in the north-east of the Site, which included areas of scrub to the south. It should be noted that whilst other areas of grassland are not currently suitable to support reptiles, should the sward be left uncut/ungrazed they could become suitable in the future, whilst field edges and hedgerows may also provide localised habitat including for roaming individuals.

Dormouse – the Site supports areas of woodland and hedgerows capable of supporting dormouse. In particular the woodland and hedgerows within the northern part of the Site are also connected to a network of further hedgerows and woodland outside of the site.

Badger –the habitats present on the site provide suitable foraging habitat for badger, whilst woodland within the site and banks around field margins provide suitable opportunities for sett building. During the Phase 1 Habitat Survey several signs of badger were noted within the southern part of the Site, including dung pits and mammal paths.

Bats – The Site provides potential roosting habitat for bats within trees in the woodland and along field boundaries (hedgerows and mature treelines). There is also the potential for bats to be roosting in buildings within the Site, including the church. Hedgerows and treelines within the Site also provide suitable commuting routes for bats, whilst the woodland and grassland areas provide potential foraging habitat.

Birds – nesting birds are likely to be present within the hedgerows and trees, including species of principle importance and local BAP priorities such as song thrush and farmland birds.

The Site supports areas of relatively floristically diverse grassland, both to the north and south London Road, with numerous LWS's identified in the wider area given the presence of species-rich grassland and notable

invertebrate species. Therefore there is the potential for notable invertebrate species to be present. Given the relatively high levels of disturbance within the majority of the Site, as well as the relatively urban nature of the Site and surrounds, it is considered unlikely that ground nesting birds, such as skylark, or brown hare would be present. Use of the fields by wetland/wading birds is also considered unlikely given the vicinity to roads and built development. No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.	
Ecological Appraisal	
Designated Sites	No internationally designated sites are present within or adjacent to the Site, however two Nationally designated sites lie within close proximity. Basildon Meadows SSSI lies 180m to the west of the Site. Vange and Fobbing Marshes SSSI also lies 500m to the south-east of the Site. Given that these Sites are located across major trunk roads, they are not ecologcally connected to the Site and are therefore unlikely to be affected by any development within the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Both Thompkins Farm Meadow and All Saints Grassland LWS as well as part of Nether Mayne Road Verges LWS lie within the Site boundary, as discussed above in the Biological Records section. A further two LWS's abut the Site boundary. There is therefore the potential for impacts on these sites including habitat loss, contamination (run-off, smothering and dust deposition) and increased levels of recreation pressure and associated 'rban effects (such as flytipping and trampling) due to an increase in the local population.
Habitats	Overall the Site supports a range of habitats of varying value, with those such as improved grassland, amenity grassland and scrub relatviely common and widespread. Woodland habitats are likely to be of greater value, as are the hedgerow network and areas of more species-rich grassland. The Site supports two habitat types listed on the Essex BAP and as Habitats of Principal Importance in England: Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.. Species Rich Grasslands (lowland meadows) provide nectar-rich habitat of value for invertebrates and other wildlife. Given the apparent diversity of the fields within the Site, there is the potential for several of them to qualify as BAP habitat. Development within the Site could result in impacts such as habitat loss or destruction, frafgmentation, contamination through runoff and increased recreational pressure.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout much of the site, with hedgerows, species rich grasslands and woodland habitats likely to be of highest value to a wide range of species. The remaining grassland and scrub habitats are likely to be of lower value for species, however there is some potential for species such as badger or nesting birds to be using these habitats for shelter (the potential for such species to be present would increase should the field margins and grasslands develop a longer, more tussocky structure). Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk

	of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Reptiles within grassland habitats, and adjacent scrub/woodland/hedgerows; • GCN associated with grassland, woodland and hedgerow habitats, as well as any waterbodies; • Badgers, particularly the presence of setts associated with woodlands and field boundaries; • Dormouse within the woodland or hedgerows; • Bats roosting within woodland and/or hedgerow trees, and buildings. Bats may also use linear habitats for foraging and commuting with fragmentation and habitat loss potentially affecting these species. . • Nesting birds could also be affected by any removal of hedgerows, scrub or trees. • Presence of notable invertebrate species which may use species-rich grasslands in particular, for example shrill carder bee;
Ecological Avoidance, Mitigation and Enhancement Options	
Further surveys Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. Species surveys may be required for reptiles, GCN, badger, dormouse, bats, birds and invertebrates subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, such as hedgerow surveys or grassland surveys. **Avoidance, Mitigation and Enhancement Options** Any development proposals should retain LWSs and areas of species-rich grassland. Proposals should also seek to retain woodland within the Site, as well as hedgerows and mature trees where possible (particular any identified as veteran trees) given their potential value as wildlife habitat and for ecological connectivity . As a result development should focus on localised areas of the Site, with other areas retained to enable habitat enhabncment and the delivery of mitigation measures. This should include measures to maintain and further enhance species-rich grassland, in particular to benefit invertebrates. Best practice construction methods as detailed within a Constrcution and Environmental Management Plan, or similar, should be followed to protect retained habitats and designated sites from runoff, dust deposition and root compaction (for example). New development would also likely result in an increase in recreational pressure and therefore mitigation should include measures to guard against this. Options could include fencing or native scrub planting along woodland edges to deter access, and the provision of high quality natural greenspace and recreation land as an alternative resource to sensitive habitats. If notable or protected species are confirmed as present, mitigation requirements may include: Timing of works to avoid impacts on nesting birds; If bat roosts are found and cannot be retained a suitable suite of mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence; Mitigation to protect dormouse including avoiding the severance of suitable habitat features (including hedgerows) from other nearby habitat. Where removal of hedgerows is required, vegetation management or translocation of dormouse to a previously prepared receptor site under a NE licence may be required; Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);	

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Enhancement of habitat outside the potential development area to provide additional opportunities for species impacted by the proposals, such as invertebrates;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The central part of the site (immediately north of London Road) is considered to be the least sensitive in terms of future development, with less sensitive habitats present and already supporting development. The southern and northern parts of the site supported several sensitive habitat features (including woodland and mature trees, species-rich grassland, and hedgerows. In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Development is focused within areas of lower ecological value, with areas of higher value habitat, including LWS's and species-rich grassland, retained and enhanced, including to enable the delivery of mitigation to address any increase in recreational pressure.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

To ensure impacts are avoided, it is recommended that the Tompkins Farm Meadow LWS and All Saints Grassland LWS are excluded from the proposed development site boundary (see **Figure 28.2**), although as detailed above it is also possible that other areas of species-rich grassland would need to be retained to reduce potential ecological impacts and allow the delivery of mitigation (this would need to be informed by more detailed survey).

Basildon Borough Council Ecology Surveys

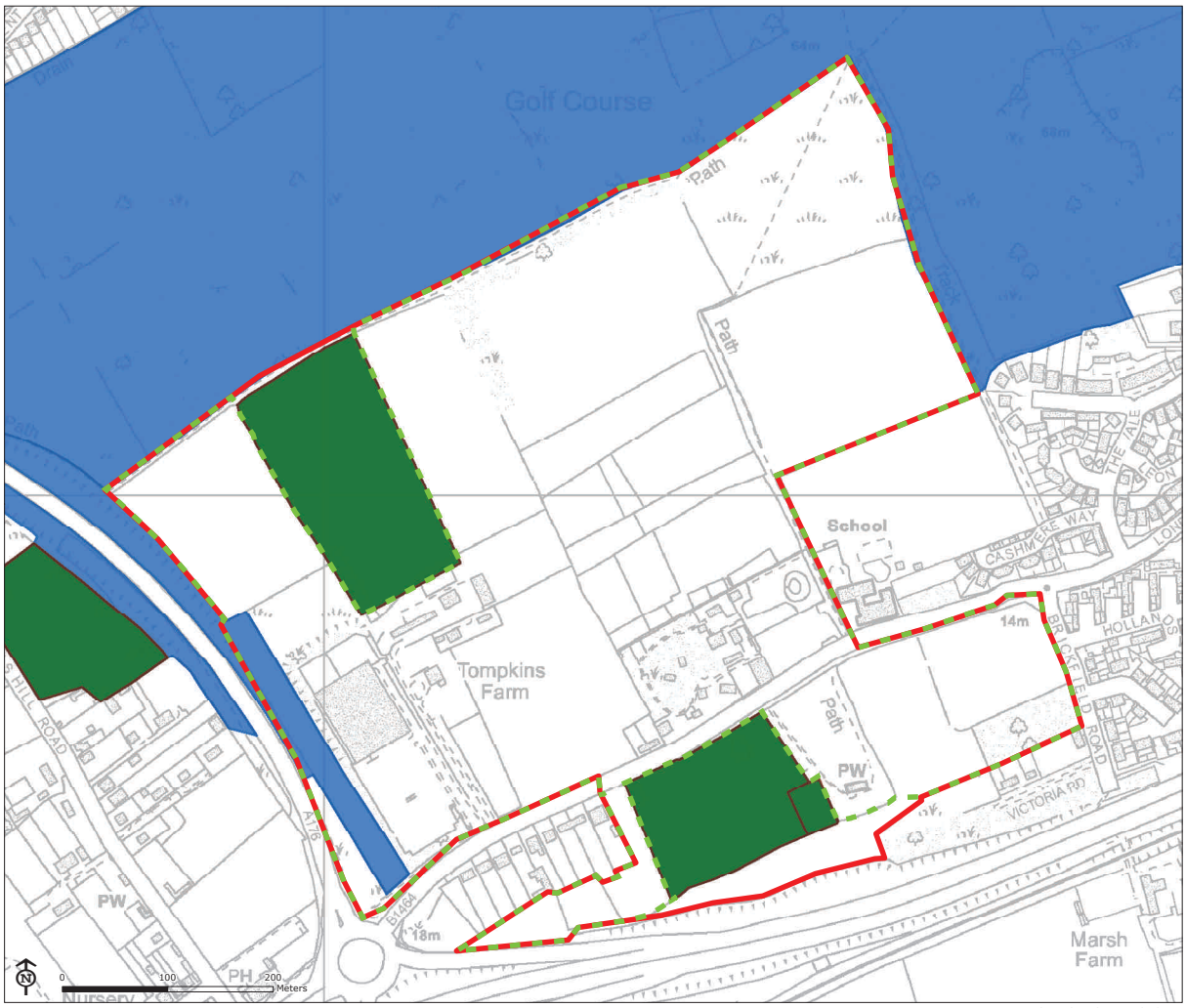
Figure 28.1: Phase 1 Habitat Survey: Site 25- Land at Hannakins farm

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Hedge with trees (species-poor)
- Broadleaved woodland (semi-natural)
- Scrub (dense/continuous)
- Scrub(dense/continuous)/ Broadleaved scattered trees
- Neutral grassland (semi-improved)
- Poor semi-improved grassland
- Hardstanding
- Amenity grassland
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:3,500

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015



Basildon Borough Council Ecology Surveys

Figure 28.2:
Phase 1 Habitat Survey:
Site 25- Land at Hannakins farm

- Site Boundary
- Suggested amendments to site boundary
- BAP Priority Habitat
- Local Wildlife Site

Map Scale @ A3: 1:3,500

LUC

CB:Green_C EB:Goosen_V LUCLON 6485-01_004_Suggested_site_boundaries 22/12/2015

29 Site 26: Land East of Noak Bridge, Basildon

Survey Site	26	Location	Basildon

Site Overview

The Site is situated north of Basildon and is adjacent to farmland to the north, Noak Bridge Nature Reserve to the south, Barleylands Road to the west and residential properties to the east.

The Site itself is comprised of horse paddocks, works yards, football pitches and land associated with private residences.

Site Photographs

View to the south of Wash Road

View of pond to the north of Wash Road

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA. No nationally designated sites were identified within 1km of the Site.

The following locally designated site was located within 1km:

Noak Bridge Reserve LWS created as a receptor site for GCN and reptiles including adder as part of a previous housing development (very small area within the Site along the south-west boundary).

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 29.1)

Semi-improved Grassland

Semi-improved grassland was recorded in a large area to the south of Wash Road. The grassland consisted of a series of fields that were grazed by horses, with the sward grazed to a varying height. Species included perennial rye grass, Yorkshire fog, crested dog's tail, creeping buttercup, bristly ox-tongue, red clover, white clover and Timothy, and occasional common ragwort. Fields adjacent to Wash road were noted to contain

small clumps of scrub and tall ruderal vegetation, including species, such as bramble, common nettle, *Chenopodium sp* and dock *Rumex sp*. Semi-improved grassland was also recorded to the north-east and west of Daniel's Farm.

Grassland to the north-east was overgrown, disused land with tall ruderal vegetation and scrub. Species included dominant cock's-foot, abundant bramble, frequent great willowherb, fleabane, oak regeneration, creeping thistle and ribwort plantain, and occasional *Umbellifer sp*, *Chenopodium sp* and bristly ox-tongue. The grassland to the west was a relatively short sward height, as it was grazed by sheep. Species included dominant perennial rye grass, abundant moss and locally frequent common nettle.

Poor Semi-improved Grassland

Poor semi-improved grassland was present in a field to the south of Wash Road and the works yard. The field was used as an extension to the works yard, which has resulted in large areas of bare ground interspersing rough, coarse grassland. Species included dominant perennial rye grass, abundant bramble, locally abundant white clover, frequent dock *Rumex sp* and creeping thistle, occasional bristly ox-tongue, and occasional teasel. A further field supporting rough poor semi-improved grassland was noted to the north of Wash Road. The grass supported a dense thatch and was dominated by cock's-foot with abundant red fescue and false oat-grass, bent-grass *Agrostis* sp., and ragwort.

Amenity Grassland

Football pitches in the north of the site consisted of amenity grassland. The grassland was short and regularly managed. Species present included perennial rye grass, cock's-foot, white clover, yarrow, ribwort plantain, common daisy, field speedwell and dandelion.

Amenity grassland was also noted surrounding a complex of ponds in the north.

Scrub

Dense scrub was recorded in the south-west corner of the site along the boundary and included a small section of the Noak Bridge LWS. Species included dominant blackthorn, abundant hawthorn, frequent ash and oak, occasional crack willow.

Other small areas of dense scrub were scattered through the Site.

Tall Ruderal Vegetation

Tall ruderal vegetation was recorded in the north of the site adjacent to a complex of ponds. Species included dominant creeping thistle and abundant dock *Rumex sp*.

Hedgerows and Treelines

There was a network of hedgerows, particularly in the south of the site. The hedgerows largely comprised of blackthorn, hawthorn and elder. Other hedgerows present and associated with private residences contained introduced shrubs, such as laurel.

Other Habitats

A number of ponds were present within the Site, including a complex of ponds to the north and a moat to the south of Wash Road. All contained a low level of aquatic vegetation.

A small number of dry ditches were recorded and were situated adjacent to hedgerows or scrub habitats.

Fauna

Potential was identified for the following protected species to be present within the Site:

- GCN –A number of waterbodies were identified on the site and within 500 metres of the Site (as identified from OS base mapping; further investigation would be required) which could support breeding GCN. Terrestrial habitats, such as rough grassland, scrub and hedgerows provide suitable habitat to support GCN.
- Reptiles – there is potential for reptiles to be present in the rough grassland habitats through the Site, including areas with scattered bare ground, scrub and tall ruderal habitats.

- Badgers – the open grassland, hedgerows and scrub may provides suitable habitat for badgers to build setts and forage.
- Bats – the mosaic of open grassland, hedgerows and scrub may provide suitable foraging and commuting habitat for bats. The various buildings recorded within the site may also provide suitable roosting opportuntities.
- Birds – there is potential for birds to nest within hedgerows, scrub and trees, including pririty species such as song thrush and farmland birds. Use of the grassland habitats by ground nesting and wetland/wader species is unlikely given levels of management and disturbance.

Grassland habitats within the site were considered too disturbaed and isolated to support a brown hare population.

Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within or adjacent to the Site. Given the habitats present on the Site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. A small section of Noak Bridge LWS, as discussed in the Biologica records section is situated in the south-west of the site. There is potential for significant impacts from habitat loss to contamination (run-off, smothering and dust deposition) and increased levels of recreational disturbance from increased local populations to effect the site.
Habitats	The habitats identified within the Site are common and widespread, and generally of low ecological value. However the habitat mosaic provided within the centre of the site as well as with more species-rich grasslands in the south may be of some value to wildlife in the lcoal context. Hedgerows are listed as a Essex Biodiversity Action Plan Priority Habitat, however the hedgerows within the site that were identified as species-poor. It is therefore unlikely that these would qualify as 'important hedgerows' under the Hedgerow Regulations (further assessment would be required). The hedgerows provide wildlife habitat in their own right, and ecological connectivity through and around the site which could be fragmented as a result of development. Although these habitats are not qualifying feature, theyare in their own right important habitat for protected/notable species and provide valuable ecological corridors corridor to the wider landscape. New development could result in damaging these important features. Ponds are also identified as Essex Biodiversity Action Plan Priority Habitat and could be affected by habitat loss as well as contamination during works.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • GCN may breed within waterbodies, and GCN and reptiles may be present grasslands, ruderal habitats, hedgerows and scrub. • Badgers may establish setts within hedgerows and scrub, and forage through the site

	• Bats may roost in buildings, and forage/commute through the Site. • Nesting birds within hedgerows and scrub.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, bats and birds subject to proposals. More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows, scrub, wet ditches and ponds within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Mitigation may also be required to protect the adjacent Noak Bridge LWS from increased recreational pressure, such as fencing to prevent access, enhancment of habitats within the LWS to increase robustness and/or creation of alternative natural greenspace as part of any development.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The site is considered to be of low ecological value and it is likely that development can be delivered without resulting in significant ecological impacts. The sites network of hedgerows and scrub should be protected, alongside wet ditches and ponds, which provide potential habitat for protected/notable species, as well as a valuable ecological corridor.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance

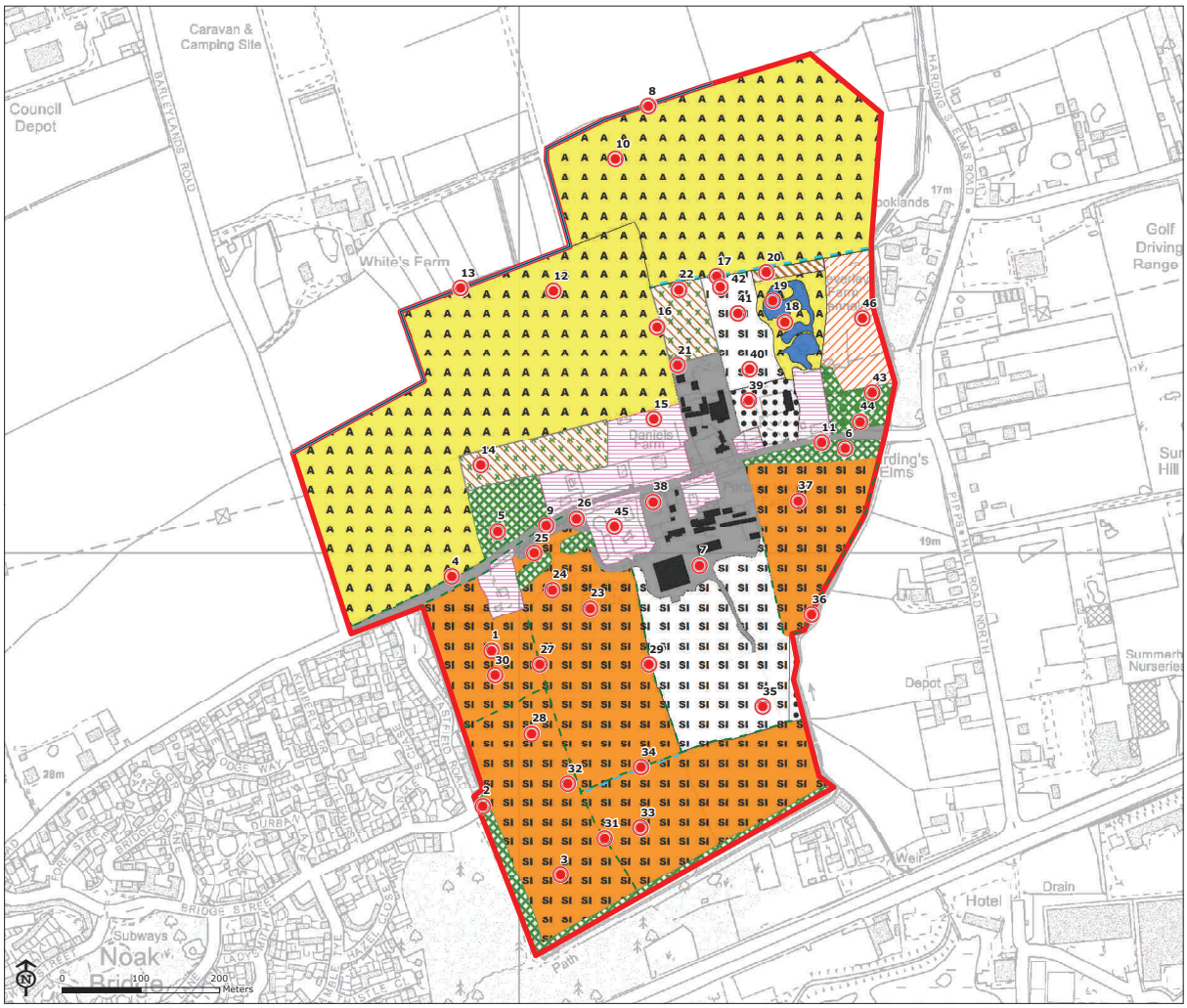
and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows, scrub and ditches, whilst ponds should also be maintained.

Measures are developed to avoid impacts on the adjacent Noak Bridge LWS.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 29.1: Phase 1 Habitat Survey: Site 26- Land East of Noaks Bridge

- Site Boundary
- Target note
- Defunct hedge (species-poor)
- Dry ditch
- Wet ditch
- Scrub (dense/continuous)
- Scrub(dense/continuous)/ Broadleaved scattered trees
- Neutral grassland (semi-improved)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Poor semi-improved grassland
- Other tall herb and fern (ruderal)
- Standing water
- Hardstanding
- Amenity grassland
- Buildings
- Bare ground
- No direct access
- Private residence

LUC

Map Scale @ A3: 1:4,700

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 23/12/2015

30 Site 27: Land East of Bowers Gifford, Basildon

Survey Site	27	Location	Basildon

Site Overview

The Site is located east of Basildon and is surrounded by the A127 in the north, the A130 to the south and east and a mixture of residential and agricultural land to the west.

The Site itself is comprised almost entirely of agricultural land with small areas of residential housing, private land, a church and a reservoir.

Site Photographs

View of fields south of farm buildings in the centre of the site

View of fields in the north

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

Local Wildlife sites in the vicinity included:

Rushbottom Lane Flood Pound (supports marshy grassland (Rare in Essex) and several County rarities including black sedge (55m south-east);

Home Farm Meadow– unimproved lowland meadow (600m north,)

Bowers Gifford Grassland - species rich lowland meadow supporting populations of hairy vetchling and diverse invertebrate interest (890m north-east);

The Wick Country Park– recently created park supporting a range of habitats including woodland, rough

grassland and ponds. Also supports the Essex red data list species flattened meadow-grass (1km north)

Species Records

No records of protected and/or notable species were identified within the Site.

Habitat Description (see Figure 30.1)

Semi-improved grassland

A small area semi-improved neutral grassland was present to the west of a church in the centre of the site and alongside the A310The grassland was unmanaged with a tall, tussocky structure. Species included perennial rye grass, *Chenopodium sp* and bristly ox-tongue.

Poor semi-improved grassland

Small areas of poor semi-improved grassland were also identified around the site associated with field margins and fields, including east of the farm yard in the centre of the site.

Scrub

Dense scrub was recorded to the south of Clarence Road. Species included hawthorn, bramble, elder, oak and apple *Malus sp*.

Tall Ruderal

Tall ruderal vegetation was noted along the eastern boundary with the A310. Species included bent-grass *Agrostis sp*, creeping thistle, red fescue, white clover, bristly ox-tongue and *Chenopodium sp.*

Hedgerows and Treelines

Hedges were recorded through the Site, most of which were defunct and species poor. Species included elm *Ulmus sp*, field maple, blackthorn, bramble, hawthorn and dog rose. A newly planted hedgerow between the arable field and the balancing ponds alongside the A310 was species rich, with species including blackthorn, spindle, hawthorn, dogwood, guelder-rose and willow *Salix sp*.

Scattered trees were noted to the north of the Site, to the south of Clarence Road and to the east of Alpha Close. Scattered trees to the north of the Site were a mix of broadleaved and conifer trees, including oak, cypress *sp*, ash, elm, wild privet and horse chestnut. Scattered trees to the south Clarence Road included oak; and to east of Alpha Close were apple Malus *sp*.

Arable

The majority of the Site is comprised of arable fields. All the fields were ploughed, resulting in bare ground.

Buildings

Buildings were associated with residential housing, offices, farm buildings and a church, the majority located in the centre of the site.

Other Habitat

Two ponds were noted north and south of North Benfleet Road. The pond margins were vegetated with reed mace. A series of balancing ponds were located along the east boundary associated with the A310 (no direct access available).

Dry ditches were recorded throughout the Site, along the field boundaries.

A construction site was also recorded in the south of the Site, with no direct access available.

Fauna

Potential was identified for the following protected species to be present within the Site:

- GCN –A number of waterbodies were identified on the site and within 500 metres of the Site (as identified from OS base mapping; further investigation would be required) which could support

breding GCN. Terrestrial habitats were largely sub-optimal for GCN, comprising arable fields, although areas of scrub, rough grassland, tall ruderal habitats and hedgerows provided localised opportunities for this species.

- Reptiles – there is potential for reptiles to be present in the rough grassland, however these area are relatively isolated.
- Badgers – the mosaic of hedgerows and open arable land provides suitable habitat for badgers to build setts and forage.
- Bats –the habitats were of relatively low potential for bats, with arable fields and the species-poor, defunct hedgerows providing sub-optimal features for bats. Mature trees and buildings provide roosting opportunities.
- Brown hare – the open arable land provides potentially suitable habitat for brown hare.
- Birds –nesting birds are likely to be present within the hedgerows, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Grassland areas were unlikely to support ground nesting species given their relatively small size and recreational disturbance, however arable fields (dependent on crops) may support such species including skylark and grey partridge. Notable use of the fields by wetland/wading birds is considered unlikely given the vicinity to the settlements and major roads, and associated disturbance.

The presence of dormouse is considered unlikely due to a lack of large areas of woodland and well connect hedgerows. Given the high levels of management and low floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are no Local Wildlife Sites within or adjacent to the Site, with LWSs in the wider area functionally isolated from the site by major roads and development. Impacts on these sites are therefore considered unlikely.
Habitats	The habitats identified within the Site are common and widespread, which are of low ecological value. Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site mostly appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development. Ponds are also identified as Essex Biodiversity Action Plan Priority Habitat and could be affected by habitat loss as well as contamination during works.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • GCN breeding within waterbodies, foraging and sheltering within hedgerows, rough grassland and scrub, or foraging or dispersing

	through arable fields. • Reptiles within localised areas of the site. • Badgers may establish setts within hedgerows and scrub, and forage through the site • Bats may roost in mature trees and buildings. • Nesting birds within hedgerows, scrub and arable fields.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, bats and birds subject to proposals (with further consideration of the potential for water vole). More detailed vegetation surveys may also be required subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

Development proposals should seek to protect hedgerows and trees within the site where possible and ensure that connectivity to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example grassland management to increase species diversity) to help mitigate for habitat loss and potential increase in recreational pressure on retained habitats.

Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The majority of the site is considered to be of low ecological value, with the Site's hedgerow network considered to be of greatest ecological value, providing potential habitat for a number of protected and notable species and provide ecological connectivity.

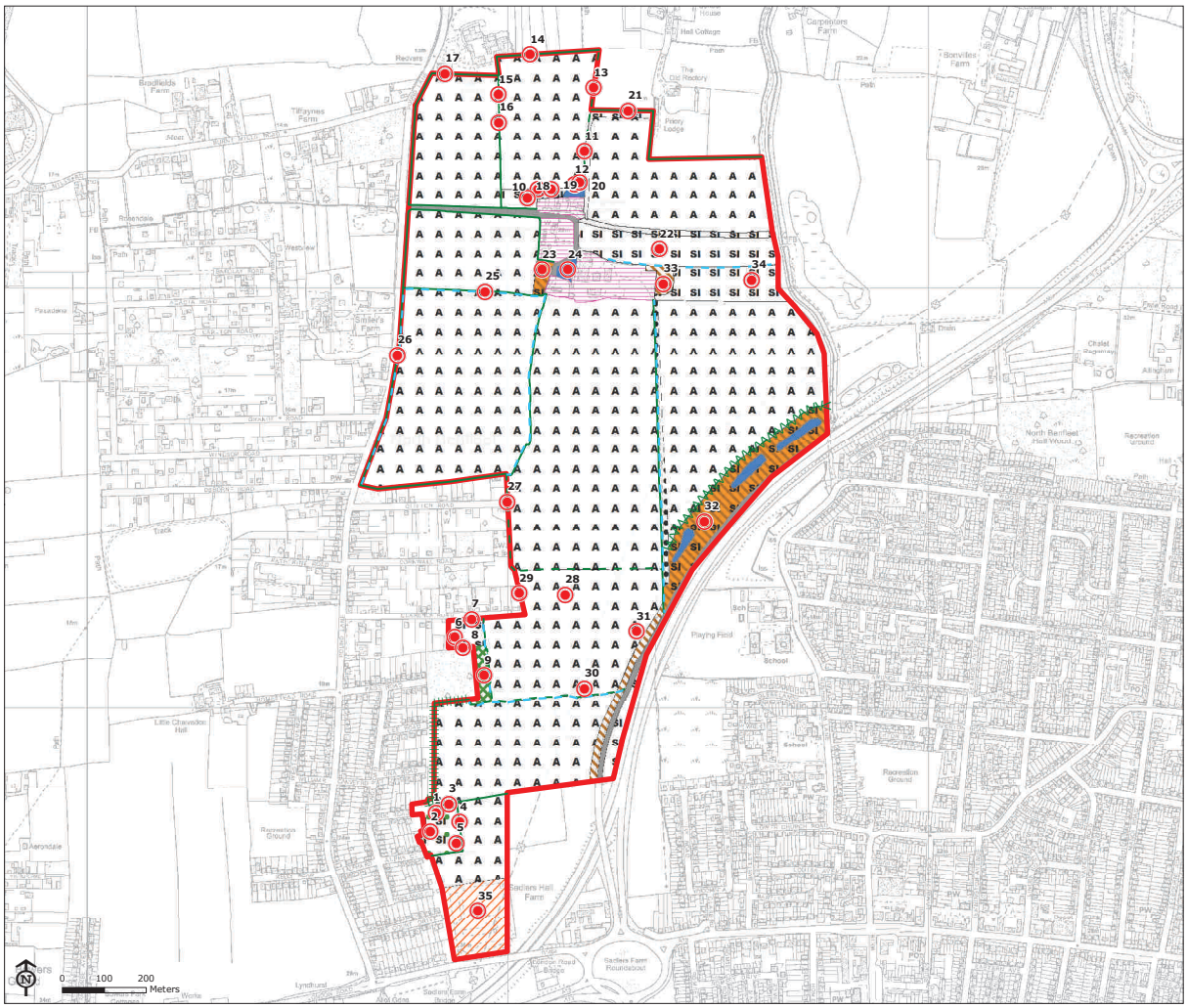
In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.

Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.

Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.

Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 30.1: Phase 1 Habitat Survey: Site 27- Land east of Bowers Gifford

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (native species-rich)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Dry ditch
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)/Other tall herb and fern (ruderal)
- Poor semi-improved grassland
- Poor semi-improved grassland/Broadleaved scattered trees
- Other tall herb and fern (ruderal)
- Standing water
- Hardstanding
- Arable
- Bare ground
- No direct access
- Private residence

LUC

Map Scale @ A3: 1:8,800

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 04/01/2016

31 Site 28: Land East of South Green, Billericay

Survey Site	28	Location	Billericay

Site Overview

The Site is situated to the south of Billericay, to the east of South Green. It was abutted by residential housing the north and west, and agricultural land to the south and east.

The Site itself comprised grassland including horse paddocks and private properties, with a stream running through the centre of the site.

Site Photographs

View in the south of the site, to the east of the houses

View of horse paddocks in the north

Ecological Baseline

Biological Records

Designated Sites/Notable Habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated sites were located within 1km of the Site:

Mill Meadows SSSI – unimproved neutral grassland supporting two red data book invertebrate species (500m north); and

Mill Meadows LNR – designation covers those parts of the site not designated as a SSSI. Supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (500m north).

The following Local Wildlife Site was located within 1km of the Site:

Parsonage Farm Green LWS – ancient farm lane supporting species rich hedgerows with diverse ground flora (520m east).

Species Records

No records of protected and/or notable species were identified within the Site .

Habitat Description (see Figure 31.1)

Semi-improved Grassland

Semi-improved grassland was recorded within fields in the centre and to the south of the site. The grassland was unmanaged with areas of scattered and dense scrub. Species included perennial rye grass, cock's-foot, creeping bent, Yorkshire fog, occasional selfheal, red clover, ribwort plantain, dock *Rumex sp* and common knapweed.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in the north of the Site, adjacent to Highfield Road. The land was grazed by horses, resulting in a short even sward height. Species included perennial rye grass, creeping buttercup, common daisy and dock.

Scrub

Scattered and dense scrub with trees was identified in the south of the horse paddocks, and around Southend Farm. Species included bramble, hawthorn, elder, ash, blackthorn, sycamore, oak and crack willow.

Hedgerows and Treelines

Species-poor hedgerows were present around the boundaries of the horse paddocks and residential housing in the north of the Site. Species included bramble, hawthorn and blackthorn with occasional oak.

A treeline in the north of the Site, adjacent to residential housing was dominated by conifers.

Buildings

Buildings within the Site were assocaited with residential housing.

Other Habitat

A stream was recorded flowing from north to south within the centre of the Site.

Fauna

Potential was identified for the following protected species to be present within the Site:

- Great Crested Newts – waterbodies were identified within 500m of the Site (as identified from OS base mapping; further investigation would be required)may provide potential breeding habitat for GCN. The mosaic of scrub and grasslands provides suitable habitat for GCN to forage, shelter and overwinter.
- Dormouse – there is potential for dormouse to be present within the Site, with large areas of woodland and hedgerows in the surrounding area connected with the scrub and hedgerow habitats within the Site.
- Reptiles – the presence of rough grassland along with scattered and dense scrub provides optimal habitat for reptiles to forage, shelter and overwinter.
- Badgers – the mosaic of open grassland, hedgerow and scrub would provide suitable foraging and and sett building habitat for badgers.
- Bats – the habitat mosaic, linear wildlife features and sheltered rough grasslands may provide high quality habitat for bats to forage and commute across the Site. Mature trees and buildings within the Site also provide suitable habitat for roosting bats.
- Birds –nesting birds are likely to be present within the hedgerows and scrub, including species of principle importance and local BAP priorities such as song thrush and farmland birds. Grassland areas were unlikely to support ground nesting species given their relatively small and surrounding scrub/hedgerows. Similarly the grassland fields were unsuitabke for use by wetland/wading birds

It is unlikely that water vole will be present within the Site due to the lack of suitable waterbodies, with the

stream overgrown and supporting sparse vegetation.

The floristic diversity in general across the Site it is unlikely that notable species of invertebrate would be present.

No invasive species were noted on the Site.

Ecological Appraisal	
Designated Sites	There are no nationally/internationally designated sites present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. There are no Local Wildlife Sites within the Site. LWS's present in the wider vicinity are unlikely to be affected by development on the site given distance and/or the lack of ecological connectivity given intervening development.
Habitats	The habitats identified within the Site were largely common and widespread, and considered to be of low ecological value. However, overall the site supported a complex mosaic of habitats likely to provide opportunities for protected species (see below). Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout the site, with hedgerows and scrub habitats likely to be of highest value to a wide range of species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Great crested newts breeding within waterbodies, and foraging, sheltering and overwintering within rough grassland and scrub habitats. • Dormouse associated with hedgerows and scrub. • Reptiles associated with rough grassland, as well as scattered/dense scrub. • Badger setts within dense scrub, and foraging throughout the site. • Bats roosting within mature trees and buildings.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for GCN, reptiles, badger, dormouse, and bats subject to proposals (with further consideration of the potential for water vole). More detailed vegetation surveys may also be required

subject to development proposals, particularly should hedgerow loss be required.

Avoidance, Mitigation and Enhancement Options

The horse pasture in the north of the site represents the lowest value habitats on the site within minimal lowest potential for ecological impacts should development proceed. The remainder if the site supports an intricate habitat mosaic, with potential to support a range of protected species. Loss of the entire site would therefore likely result in a significant ecological impact and it is recommended that development is concentrated within parts of the site (for example along Southend Road and the northern horse pastures), retaining areas for the delivery of ecological mitigation. This would be further informed by protected species surveys. Development proposals should seek to protect hedgerows, scrub and trees within the site where possible to ensure that connectivity through the site and to the wider area is maintained. Enhancement of any retained habitats should also be considered to increase the value of these habitats (for example grassland management to increase species diversity) to help mitigate for habitat loss and species impacts.

Best practice construction methods as detailed within a Construction and Environment Management Plan (CEMP), or similar, should be followed to protect retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include:

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on dormouse under a NE licence, including habitat retention where possible, sensitive timing of works and replacement habitat creation.

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

If bat roosts are found and cannot be retained suitable mitigation measures would be required under a NE licence including provision of replacement roosts and sensitive timing of works and methods;

Timing of works to avoid impacts on nesting birds;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remedial measures should regular monitoring record a decline in habitat quality or quantity.

Overall Conclusion

The north of the Site is considered to be least sensitive to development due to the reduced value of habitats, whilst elsewhere the mosaic of habitats has potential to be of value to a range of protected species.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

- Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.
- Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.
- Development is restricted to parts of the site, for example grassland habitats in the north and areas adjacent to Southend Road. This would seek to minimise habitat loss, retaining areas of habitat, and in particular hedgerows and areas of scrub for ecological connectivity, whilst ensuring sufficient space is retained on site for species mitigation.

- Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

Basildon Borough Council Ecology Surveys

Figure 31.1: Phase 1 Habitat Survey: Site 28- Land east of South Green

- Site Boundary
- Target note
- Intact hedge (species-poor)
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Wet ditch
- Scrub (dense/continuous)
- Neutral grassland (semi-improved)
- Neutral grassland (semi-improved)/Scrub (scattered)
- Poor semi-improved grassland
- Hardstanding
- Buildings
- Private residence

LUC

Map Scale @ A3: 1:2,300

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 04/01/2016

32 Site 29: Land West of Billericay, South of London Road and North of Blunt Walls Road, Billericay

Survey Site	Site 29	Location	Billericay

Site Overview

The Site is located to the south-west of Billericay, with London Road bordering the Site to the north. Agricultural land abuts the Site in the south and west, and residential properties are located to the east.

The Site comprises a mixture of amenity sports facilities, agricultural land and small areas of grassland and scrub.

Site Photographs

Marshy grassland in the north of the Site

View of cricket pitch looking north

View of informal open space, looking west

Anthills within rough grassland

Ecological Baseline

Biological Records

Designated sites/notable habitats

There are no Natura 2000 sites (SPAs or SACs) or Ramsar Sites within Basildon Borough. However, three SPA designations have been noted in relatively close proximity to the borough boundary, including Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) SPA, Benfleet and Southend Marshes and Thames Estuary and Marshes SPA.

The following nationally designated sites were identified within 1km of the Site:

Mill Meadows LNR - designation covers those parts of the site not designated as a SSSI. Supports grassland, woodland and scrub mosaic supporting two red data book invertebrate species (330m north-east).

The following Local Wildlife Sites were identified within 1km of the Site:

Bluntswall Shaws – ancient deciduous woodland (600m south-west)

Frith Wood – ancient deciduous woodland (870m south-east);

Bluntswall Wood – ancient deciduous woodland (900m south-west)

Laindon Common - ancient acid grassland, and also supports populations of a rare arboreal ant *Lasius brunneus.*(960m south-east).

Round Wood – ancient woodland supporting the red data book species Cyperus sedge (1km north-west)

Species records

The following records of protected or notable species have been identified within the Site boundary:

Brown Long-eared Bat;

Common Pipistrelle;

Eurasian Badger; and

Waxwing.

Habitat Description (see Figure 32.1)

Marshy Grassland

Marshy grassland was noted within a field in the north-east of the Site, supporting a dense thatch and tussocky structure. To the north of this area several large anthills were noted. The grassland was relatively diverse and was dominated by red fescue. Creeping bent and compact rush were abundant with tufted hair grass locally abundant. Hairy sedge was frequent to abundant and cock's-foot, black knapweed and common couch-grass were all frequent. Yarrow, meadow buttercup, Yorkshire fog and sorrel were occasional and greater willowherb, bristly ox-tongue, soft rush, birds-foot trefoil, ragwort and bramble were all present but rare. To the west of this area a potential ephemeral pond was noted, however this was dry at the time of survey and supported similar species as described above.

Poor Semi-improved Grassland

Poor semi-improved grassland was noted in an area of informal open space north of the football ground in the east of the Site. The grassland had a long, dense structure and was dominated by false oat-grass with abundant red fescue. Many ruderal species were also present throughout including abundant creeping thistle, abundant to locally dominant greater willowherb, locally frequent bristly ox-tongue and occasional common nettle. Common sorrel and vetches were present but rare. Scattered oak saplings were also present throughout this area.

Poor semi-improved grassland was also noted within two fields in the north-east of the Site. The grassland was dominated by cock's-foot with abundant false oat-grass and locally frequent meadow buttercup.

Amenity Grassland

Amenity grassland was noted in the form of cricket pitches to the south-east of the Site. These were dominated by perennial rye-grass. Amenity grassland was also noted surrounding the tennis courts in the centre of the Site. Further areas of amenity grassland comprised lawns associated with residential properties.

Semi-natural Broadleaved Woodland

Semi-natural broadleaved woodland was noted south of the tennis courts in the central part of the Site. The canopy was dominated by oak sycamore and the shrub layer was dominated by hawthorn with rose present but rare. Ground flora was dominated by ivy with occasional cow parsley.

Broadleaved Plantation Woodland

Plantation woodland was noted along part of the north-eastern Site boundary. The woodland was dominated by oak with abundant cherry and Cypress sp. The shrub layer was dominated by bramble with hawthorn present but rare.

A further area of plantation woodland was noted in a band between the tennis courts and Greenleas Farm. The woodland was dominated by young poplar and silver birch, with no understory and sparse ground flora. To the north of this area of woodland, an area of semi-mature plantation woodland was noted. Trees were dominated by young oak, with a shrub layer of hawthorn and bramble.

An area of eucalyptus plantation was noted to the east of the Site, south of Greenleas Farm. The understory included abundant elder and occasional holly, and the ground flora was dominated by common nettle.

Scrub with Scattered Trees

Dense scrub with scattered trees was recorded to the south of two fields within the Site. In the northern-most field the scrub was dominated by bramble with frequent hawthorn and blackthorn. Scattered trees including occasional oak, with Lombardy poplar also present. To the south of the southern-most field the scrub comprised abundant hawthorn, blackthorn and bramble with occasional mature oak trees also present. A further area of scrub to the south-east of the Site was dominated by bramble with abundant blackthorn,

and trees included ash and cherry.

Hedgerows and Treelines

Hedgerows and treelines within the Site comprised a mixture of hawthorn, bramble, Leyland cypress, bird cherry, oak and silver birch. Leyland cypress treelines were also noted along the northern Site boundary, and in several locations throughout Greenleas Farm, to the north-east of the Site.

Running Water

Running water in the form of a small stream was noted running along the western site boundary. There was no aquatic vegetation and the water appeared turbid and polluted. Bank vegetation was also sparse. A further stream was noted within a central band of woodland running east to west through the Site. Aquatic vegetation was not present and bank vegetation was dominated by ivy.

Buildings and Hardstanding

Buildings and associated hardstanding within the Site included:

Greenleas Farm to the north-west;

A stable block to the north-east;

The cricket pavilion and club-house to the south-west; and

Tennis courts and club-house in the centre of the Site.

Fauna

Potential was identified for the following protected species within the Site:

Great crested newt – The Site provides terrestrial habitat including long grassland, scrub and woodland which are suitable to support GCN. The woodlands within the Site provided cracks and crevices in the ground providing opportunities for shelter, foraging and hibernation, with hedgerows providing similar opportunities and connectivity through the site. Several ponds were noted in the vicinity of the Site which may provide breeding habitat.

Reptiles – the main area of the Site suitable for common and widespread reptiles (in particular, common lizard, grass snake and slow worm) was areas of poor semi-improved grassland and marshy grassland in the east of the Site. It should be noted that whilst other areas of grassland are not currently suitable to support reptiles, should the sward be left uncut/ungrazed they could become suitable in the future, whilst field edges and hedgerows may also provide localised habitat including for roaming individuals.

Badger –the habitats present on the site provide suitable foraging habitat for badger, whilst woodland within the site and banks around field margins provide suitable opportunities for sett building. No setts were identified during the Phase 1 Habitat survey however the biological records highlighted badger as present within the Site

Bats – The Site provides potential roosting habitat for bats within trees along field boundaries (hedgerows and mature treelines), and within buildings. There are records of pipistrelle and brown long-eared bats within the Site. Hedgerows and treelines within the Site also provide suitable commuting routes for bats, whilst the woodland and grassland areas provide potential foraging habitat.

Dormouse – It is considered unlikely that dormouse would be present within the Site given the isolation of the woodland from other areas of suitable habitat.

Birds – nesting birds are likely to be present within the hedgerows and trees, including species of principle importance and local BAP priorities such as song thrush and farmland birds.

Given the relatively high levels of disturbance within the majority of the Site, as well as the relatively urban nature of the Site and surrounds, it is considered unlikely that ground nesting birds, such as skylark, or brown hare would be present. Use of the fields by wetland/wading birds is also considered unlikely given the vicinity to roads and built development.

The streams recorded in the vicinity were considered unsuitable for water vole given poor connectivity to suitable habitat, and the absence of suitable vegetation for shelter and foraging.

It is considered unlikely that notable species of invertebrate would be present within the Site give the lack of floristically and structurally diverse habitats. No invasive species such as Japanese knotweed or Himalayan balsam were noted within the site.	
Ecological Appraisal	
Designated Sites	No internationally or nationally designated sites are present within or adjacent to the Site. Given the habitats present on the site and the surrounding area, it is considered highly unlikely that wetland/wading bird species for which nearby international sites are designated would use the site, or at least not to such a degree that development proposals could impact on the integrity of the international sites. Similarly it is unlikely that Mill meadows LNR would be impacted by development given thedistance from and lack of ecological connectivity to the Site. Five LWS's have been identified within 1km of the Site as discussed above in biological records. The closest of these is 600m from the Site. Given this, and the lack of ecological connectivity between the Sites, impacts resulting from development are considered unlikely.
Habitats	Overall the Site supports a range of habitats, most of which are relatively common and widespread habitats (such as improved grassland, amenity grassland and scrub). However several habitats are of higher value for wildlife were recorded in localised areas including woodland and mature trees and more diverse areas of grassland (particularly the marshy grassland in the north east of the Site). Hedgerows are listed as Habitats of Principal Importance in England and are also an Essex Biodiversity Action Plan Priority Habitat. Hedgerows may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, although those on the site appeared to be species-poor. Habitat loss or ground disturbance may impact on hedgerows/trees and associated wildlife. Hedgerows and treelines also provide ecological connectivity through the site which could be fragmented as a result of development.
Species	In the absence of detailed survey it is not possible to confirm the presence of protected and/or notable species within the Site. However there is potential for such species to be present throughout much of the site, with hedgerows, semi-improved/marshy grassland and woodland habitats likely to be of highest value to a range of species. The remaining amenity grassland and scrub habitats are likely to be of lower value for species. Development within the Site may result in habitat loss and disturbance with associated impacts on a range of protected and notable species, including risk of killing and injury, loss of foraging, sheltering and/or overwintering habitat, severance of habitat connectivity affecting foraging and dispersal, and indirect impacts such as lighting rendering habitat unsuitable or increased recreational pressure resulting in an increased risk of persecution of species or predation by pets. Key potential constraints within the Site include: • Reptiles within rough grassland and ruderal habitats, and associated scrub, hedgerow and woodland habitats; • GCN associated with grassland, woodland and hedgerow habitats, if present in nearby waterbodies; • Badgers, particularly the presence of setts associated with woodlands and field boundaries; • Bats roosting within mature trees and buildings. Bats may also use linear habitats for foraging and commuting with fragmentation and habitat loss potentially affecting these species. • Nesting birds could also be affected by any removal of hedgerows, scrub

	or trees.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Surveys and species surveys to ensure that potential impacts are identified and appropriate mitigation developed. In particular, species surveys may be required for reptiles, GCN, badger, bats and birds subject to proposals. More detailed vegetation surveys may also be required subject to develepment proposals, in particular hedgerow surveys.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain woodland within the Site, as well as hedgerows and mature trees where possible. The area of marshy grassland in the north east of the site should also be retained if possible as a relatively uncommon habitat in the wider area.

Best practice construction methods as detailed within a Construction and Environmental Management Plan, or similar, should be followed to protect retained habitats from runoff, dust deposition and root compaction, for example.

If notable or protected species are confirmed as present, mitigation requirements may include:

Timing of works to avoid impacts on nesting birds;

If bat roosts are found and cannot be retained a suitable suite of suitable mitigation measures would be required including provision of replacement roosts and proceeding with works under a NE licence;

Measures to prevent harm to GCN and reptiles, such as translocation from the potential development area to a receptor site which has been suitably enhanced to support the translocated population (ideally within the wider site);

Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts (and potentially under NE licence) and best practice construction measures;

Sensitive design of any external lighting to minimise lightspill to adjacent habitats.

Other mitigation or enhancement opportunities may include:

Incorporation of green infrastructure within the development to provide opportunities for wildlife, such as green roofs or walls, SUDs, wildlife-friendly planting (native species or those providing known benefits to widlife, such as species of benefit for pollinators), and incorporation of nesting/roosting opportunities for birds and bats.

Long term management of habitats should be detailed in a Landscape and Habitat Management Plan (LHMP), including newly created as well as retained habitats to ensure the long-term viability of such habitats. Any LHMP should include remidial measures should regular monitoring record a decline in habitat quality or quantity.

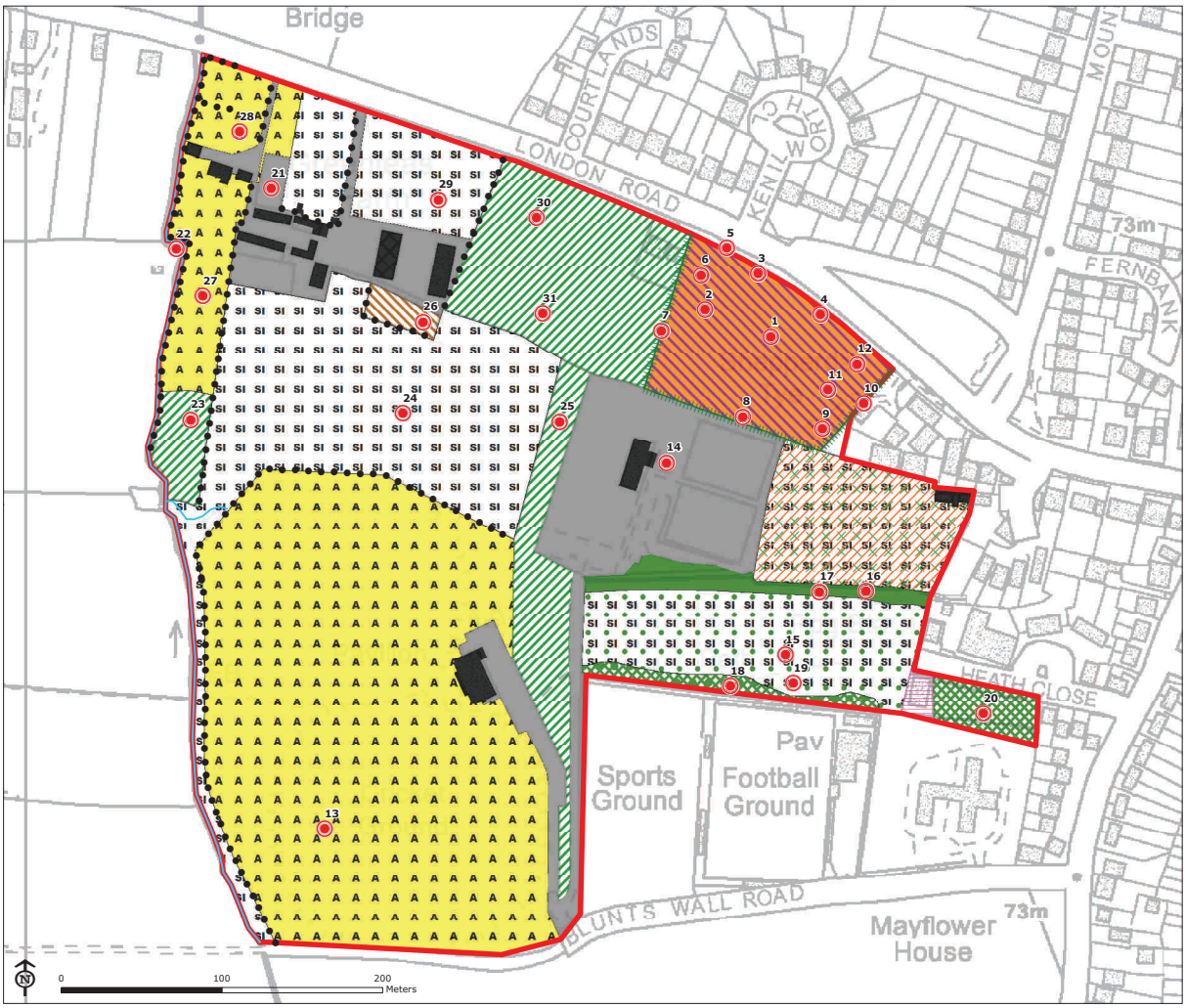
Overall Conclusion

Overall the site is considered to be of relatively low ecological value, being dominated by highly managed and species poor habitats. Localised areas or features are of greater value and provide some opportunities for wildlife, such as the hedgerows, woodland and more species rich or structurally diverse grasslands.

In conclusion it is considered that residential development may be delivered at this site without significant adverse ecological impacts on the assumption that:

- Any proposals are informed by detailed ecological survey, to inform impact assessment and the avoidance and mitigation of impacts.
- Mitigation measures are developed to address any identified impacts on protected and notable species, as informed by the above surveys.
- Proposals should seek to retain ecological connectivity through the site, in particular as provided by hedgerows and treelines.
- Incorporation of green infrastructure within the development, and ensuring habitats are managed to

benefit wildlife in the long-term.



Basildon Borough Council Ecology Surveys

Figure 32.1: Phase 1 Habitat Survey: Site 29- Land North of Blunts Wall Road, Billericay

- Site Boundary
- Target note
- Running water
- Hedge with trees (species-poor)
- Tree line
- Broadleaved woodland (semi-natural)
- Broadleaved woodland (plantation)
- Scrub (dense/continuous)
- Scrub(dense/continuous)/ Broadleaved scattered trees
- Marshy grassland
- Poor semi-improved grassland
- Poor semi-improved grassland/ Scrub (scattered)
- Poor semi-improved grassland/Broadleaved scattered trees
- Other tall herb and fern (ruderal)
- Hardstanding
- Amenity grassland
- Buildings
- No direct access
- Private residence

LUC

Map Scale @ A3: 1:2,300

CB:Green_C EB:Goosen_V LUCLON 6485-01_001_Map 22/12/2015

33 Overall Conclusions

33.1 29 Sites were subject to ecology assessment in 2015, including desk based reviews and site surveys. These assessments sought to advise whether the potential development sites as identified were broadly appropriate, and the potential mitigation measures which may be required to address potential ecological impacts.

33.2 Overall, the Sites were considered appropriate although refinements have been recommended for three of the Sites to adjust the boundary and exclude areas of particular value (namely Local Wildlife Sites and/or Ancient Woodland). Likely requirements for further ecological survey and required mitigation measures were identified for each Site to facilitate the delivery of development whilst ensuring ecological impacts were avoided, mitigated or compensated in accordance with local and national planning policy requirements.

33.3 However, it is important to recognise that the development of detailed design proposals, and planning applications, must be supported by an appropriate level of ecology input to ensure that impacts are avoided wherever possible, and mitigation requirements and enhancement opportunities are in-built to the scheme design.

Appendix 1: Phase 1 Habitat Survey Target notes

Basildon Ecology Surveys 2015: Phase 1 Habitat Survey Target Notes

Site 1: Land r/o 200 London Road, Wickford

Target Note	Description
1	Private garden – conifer hedgerows, scattered trees including conifer, birch and horse chestnut and grassland species including perennial rye grass, common daisy and white clover.
2	Dense scrub dominated by bramble.
3	Dense scrub dominated by blackthorn, abundant bramble and oak, and occasional birch.
4	Private garden dominated by perennial rye grass, abundant red clover and white clover and occasional dandelion. Scattered trees included apple, pear, walnut. There was occasional bramble and common nettle as well.
5	Dense scrub dominated by bramble, frequent blackthorn, abundant hawthorn and bramble, locally frequent great willowherb and occasional dog rose and elder.
6	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover, frequent greater plantain, fat hen, occasional smaller cat's-tail, selfheal and dock and rare ox-eye daisy.
7	Poor semi-improved grassland dominated by perennial rye grass, abundant creeping buttercup, locally abundant common nettle, frequent greater plantain, ox-eye daisy, locally frequent fleabane, and occasional teasel and selfheal.
8	Semi-improved grassland dominated by perennial rye grass, abundant white clover and creeping buttercup, frequent yarrow, ribwort plantain and red fescue, locally frequent fleabane, occasional red clover and tufted-hair grass, and rare vetch species with scattered scrub including dominant hawthorn.
9	Poor semi-improved grassland dominated perennial rye grass and abundant creeping buttercup with scattered ash and oak.
10	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover and locally abundant ribwort plantain. Used for parking caravans.
11	Poor semi-improved grassland dominated by perennial rye grass, abundant common daisy, frequent ground ivy, and occasional common nettle and goosefoot *Chenopodium* sp.
12	Dense scrub dominated by bramble and blackthorn.
13	Poor semi-improved grassland dominated by perennial rye grass, abundant cook's-foot, locally abundant dead-nettle *Lamium sp* and frequent white clover.

14	Dense scrub dominated by bramble.
15	Poor semi-improved grassland dominated by perennial rye grass, abundant creeping buttercup and common daisy and frequent dock.
16	Dense scrub dominated by bramble, abundant blackthorn and occasional sycamore and hawthorn.
17	As per TN 16
18	Tall ruderal dominated by common nettle.
19	As per TN 15
20	Dense scrub dominated by blackthorn, abundant bramble and hawthorn, and locally abundant great willowherb.
21	Poor semi-improved grassland dominated by perennial rye grass, abundant ground ivy and bent-grass.
22	Conifer treeline.
23	Grass field – horse paddock.
24	Hedge with trees bordering the River Crouch. Blackthorn dominant, bramble occasional, rose rare. Trees including young ash also present.
25	Large pile of horse manure.
26	Grassland of slightly longer sward length (30cm).
27	Horse manure pile.
28	As per TN24.
29	Bramble dominant.
30	Semi-improved neutral grassland with bent-grass, crested dog's tail, black knapweed, bryophytes, ribwort plantain all abundant. Creeping cinquefoil locally frequent. Red clover, cock's-foot and false oat-grass occasional. Vetch, tare, yarrow, ragwort, greater plantain and daisy all rare.
31	Fewer species including abundant white clover.
32	Poor semi-improved grassland. Cock's-foot and perennial rye-grass dominant. Meadow buttercup, daisy, red fescue and bryophytes abundant. Stitchwort, white clover and young oak trees occasional.
33	Semi-natural broadleaved woodland. Oak and ash dominant. Shrub layer sparse occasional bramble, elder and rare holly. Ground flora dominated by ivy. Occasional herb Robert and Lords-and-Ladies.
34	Bund dominated by bramble and other specie as per TN32. Potential for reptile and GCN sheltering.
35	Area used for dumping tyres and rubble.

36	Poor semi-improved grassland. Cock's-foot dominant. Abundant Timothy, bent-grass, perennial rye-grass. Occasional dove's-foot cranesbill, yarrow and creeping cinquefoil. Dense thatch suitable for reptiles.

Site 2: Land south and north of Barn Hall

Target Note	Description
1	Improved Grassland dominated by perennial rye grass abundant white clover and frequent creeping buttercup.
2	Dense scrub dominated by bramble abundant blackthorn, frequent hawthorn, occasional dog rose and oak. Ground flora dominated by ivy, frequent white clover and locally abundant common nettle.
3	Poor semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog, frequent white clover, occasional dandelion. And bristly ox-tongue.
4	Dense scrub with scattered trees dominated by blackthorn, abundant hawthorn, frequent oak, ash and occasional elm Bat roost potential from mature oaks.
5	Hedge dominated by bramble, occasional elm and ash.
6	Hedge dominated by blackthorn, abundant bramble, occasional hawthorn and dog rose.
7	Bare ground with abundant greater plantain and occasional white clover.
8	Poor semi-improved grassland dominated by perennial rye grass, abundant bristly ox-tongue, frequent smaller cat's-tail, cock's-foot and occasional creeping buttercup.
9	Hedge with scattered trees dominated by blackthorn and occasional oak.
10	Semi-improved grassland with scattered scrub dominated by perennial rye grass, abundant cock's-foot, locally abundant bramble, common nettle, occasional bristly ox-tongue, dock and hawthorn.
11	Hedge dominated by blackthorn, abundant bramble and frequent dog rose.
12	Hedge with scattered trees dominated by blackthorn, abundant hawthorn, occasional oak, dog rose and ash.
13	Hedge with tall ruderal dominated by bramble, abundant great willowherb, frequent creeping thistle, occasional dog rose and hawthorn.
14	Dense scrub dominated by blackthorn, abundant hawthorn and frequent dog rose.
15	Tall ruderal with scattered scrub dominated nettles, abundant bramble and frequent creeping thistle.
16	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover and occasional bristly ox-tongue.

17	Poor semi-improved grassland dominated by perennial rye grass, abundant smaller cat's-tail, locally abundant white clover, frequent bristly ox-tongue and occasional Yorkshire fog.
18	Hedge dominated by blackthorn, abundant hawthorn and locally abundant wild plum.
19	Children's playground.
20	Semi-improved grassland with scattered scrub dominated by perennial rye grass, abundant bramble, great willowherb, common nettle, locally abundant white clover, frequent Timothy, cock's-foot, occasional ash, teasel, hawthorn, bristly ox-tongue, blackthorn and tufted-hair grass.
21	Amenity grassland dominated by perennial rye grass, abundant white clover, occasional dandelion and creeping thistle.
22	Hedge with scattered trees dominated by blackthorn, abundant hawthorn, and frequent field maple, occasional oak and rare ash.
23	No access – habitats include amenity grassland, tall ruderal, scattered scrub and trees.
24	Hedge dominated by blackthorn, frequent hawthorn and occasional oak.
25	Poor semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog and rare tufted-hair grass.
26	Dense scrub dominated by hawthorn, abundant ash regeneration, ivy, frequent oak, blackthorn and occasional holly.
27	Pond with a wet ditch either side.
28	Hedge dominated blackthorn, abundant hawthorn and occasional oak with tall ruderal dominated by bramble, abundant great willowherb and nettle.

Site 3: Land south of London Road, from west of Tudor Way to east of Ramsden View Road.

Target Note	Description
1	Amenity grassland with scattered trees dominated by perennial rye grass, abundant red fescue, frequent Yorkshire fog and creeping buttercup. Scattered trees had frequent apple, occasional crack willow, ash and oak.
2	Defunct hedge dominated by blackthorn, abundant hawthorn, frequent crack willow, ash, and occasional birch.
3	Hedge dominated by blackthorn, abundant bramble and frequent rose.
4	Hedgerow dominated by conifer.

5	Dense scrub with scattered trees dominated by bramble, abundant ivy, locally abundant blackthorn, frequent elm, nettle, occasional oak, elder and rare birch and sycamore.
6	Hedge dominated by bramble, elm and blackthorn.
7	Amenity grassland dominated by perennial rye grass, abundant Yorkshire fog, bryophyte species and occasional red clover.
8	Treeline with scattered scrub dominated by field maple, abundant birch, frequent hawthorn, occasional oak and elm.
9	Hedge dominated by blackthorn, abundant hawthorn and frequent bramble.
10	Scattered trees dominated by oak and abundant hawthorn.
11	Semi-improved grassland dominated by perennial rye grass, cock's-foot, locally abundant fleabane, occasional vetch and oak regeneration. Reptile potential.
12	Dense scrub with scattered trees dominated by blackthorn, abundant hawthorn, bramble and frequent mature oaks with bat roost potential.
13	Hedge dominated by blackthorn, hawthorn, frequent ash and occasional oak.
14	Semi-improved grassland dominated by perennial rye grass, abundant white clover, frequent dandelion and greater plantain.
15	Dense scrub dominated by brambles, frequent nettle and occasional fat hen.
16	Semi-improved grassland dominated by perennial rye grass, abundant couch, cock's-foot, frequent dock, creeping thistle and occasional fleabane.
17	Semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, white clover, frequent crested dog's grass and occasional medick. Mown regularly.
18	Dense scrub dominated by bramble, abundant oak, ash and guelder-rose.
19	Poor semi-improved grassland dominated by perennial rye grass, abundant bristly ox-tongue, locally abundant great willowherb frequent dandelion. Scattered scrub dominated by bramble, abundant blackthorn and occasional oak.
20	Hedge dominated by blackthorn, abundant hawthorn, occasional willow, apple and elder.
21	Dense scrub dominated by bramble and abundant blackthorn.
22	Private gardens

Site 4: Land at Shot Farm, Southend Road.

Target Note	Description
1	Dense scrub dominated by oak, abundant hawthorn, field maple, frequent sycamore,

	elm, blackthorn and occasional bramble.
2	Arable dominated by perennial rye grass, occasional ox-eye daisy, bristly ox-tongue and brome.
3	Arable dominated by perennial rye grass, abundant nettle, frequent creeping buttercup, occasional bramble and teasel.
4	Hedge with dominant blackthorn, frequent field maple, occasional ash, oak and elm.
5	Tall ruderal with scattered trees dominated by common nettle, abundant elm, cleaver, frequent bindweed, bramble.
6	Tall ruderal dominated common nettle, abundant great willowherb and bramble.
7	Row of conifer trees with rare elder.
8	Poor semi-improved grassland with scattered trees dominated by perennial rye grass, frequent oak and dock.
9	Dense scrub dominated by bramble and abundant blackthorn.
10	Dense scrub dominated by hazel, abundant field maple, frequent blackthorn, bramble, occasional ash, oak, elm and sycamore. Ground flora dominated by common nettle, abundant goosefoot, frequent butterfly-bush, occasional common mallow, cock's-foot, rare apple and rowan.
11	Tall ruderal with poor semi-improved grassland dominated by perennial rye grass, abundant bristly ox-tongue, frequent goosefoot, bramble and occasional red dead nettle.
12	Poor semi-improved grassland with scattered trees dominated by bare ground, perennial rye grass, frequent hawthorn, sycamore and occasional ash. No access but viewed from adjacent field.
13	Dense scrub dominated by blackthorn, frequent wild plum, dog wood, occasional elm and field maple.
14	Dense scrub dominated by hawthorn, abundant field maple, frequent hazel, bramble and occasional crack willow.
15	Poor semi-improved grassland dominated by perennial rye grass, abundant creeping thistle, frequent common nettle. Scattered scrub dominated by hawthorn. Reptile potential.
16	Tall ruderal with scattered scrub dominated by bramble, abundant dog rose, frequent great willowherb, blackthorn and occasional blackthorn. The ditch has locally abundant common reed.
17	Pond dominated by common reed. Great crested newt potential.
18	Dense scrub dominated by bramble, abundant hawthorn, blackthorn, occasional ash and elder.
19	Poor semi-improved grassland with tall ruderal dominated perennial rye grass, abundant creeping thistle, frequent common nettle, occasional butterfly-bush and rare dog wood.
20	Dense scrub with semi-improved grassland dominated by perennial rye grass, abundant cat's-tail, greater plantain, frequent red clover. The scrub was dominated by hawthorn,

	abundant ash, hazel, blackthorn, frequent dog wood and occasional oak.
21	Dense scrub with semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, white clover, ribwort plantain, frequent cat's-tail, red clover and occasional rough hawkbit.
22	Semi-improved grassland dominated by perennial rye grass, locally abundant great willowherb, frequent umbellifer and rare bristly ox-tongue.
23	Dense scrub dominated by bramble, abundant blackthorn, common nettle, frequent creeping thistle, oak, frequent bindweed, locally frequent red dead nettle, red clover, occasional apple, crested dog's tail and tufted hair grass.
24	Dense scrub dominated by hawthorn, abundant blackthorn, frequent oak and occasional sycamore.
25	Sense scrub with semi-improved grassland dominated by perennial rye grass, abundant white clover, frequent cock's-foot. Scrub dominated by hawthorn, abundant hazel, frequent ash, rare sycamore and guilder rose.
26	Dense scrub dominated by blackthorn, abundant bramble and frequent hawthorn.
27	Poor semi-improved grassland with scattered scrub. Grassland dominated by bent-grass, frequent cock's-foot, locally frequent soft rush and occasional ribwort plantain. Scrub dominated by blackthorn, frequent hawthorn, frequent birch, occasional bramble and dog rose.
28	Dense scrub dominated by bramble, abundant blackthorn, frequent hawthorn, and occasional oak.
29	Semi-improved grassland with scattered scrub dominated false-oat grass, abundant great willowherb, frequent dog rose, occasional hawthorn and blackthorn.

Site 5: Land at Kingsmans Farm

Target Note	Description
1	Dry ditch dominated by bramble, abundant blackthorn, great willowherb, frequent common nettle, occasional hawthorn, apple and occasional soft-rush *Juncus effusus*.
2	Short grass, mown regularly. Used as a track.
3	Area of rough improved grassland dominated by perennial rye grass, abundant Yorkshire fog, frequent Timothy and creeping buttercup.
4	Defunct hedge dominated by bramble and rare hawthorn.
5	Defunct hedge dominated by bramble, abundant blackthorn, frequent hawthorn and willow species.
6	Improved grassland dominated by Yorkshire fog and perennial rye grass.

7	Defunct hedge with scattered trees and tall ruderal dominated by creeping thistle, abundant bramble, frequent field maple, hawthorn, occasional oak, ash, common nettle and dog rose.
8	Improved grassland dominated by perennial rye grass, Yorkshire fog, locally abundant vetch and bent-grass.
9	Defunct hedge with tall ruderal dominated by bramble, abundant common nettle, creeping thistle, locally abundant common reed, and occasional oak.
10	Improved grassland grazed by horses. Dominated by perennial rye grass, abundant Yorkshire fog, creeping buttercup, occasional ragwort and rare bristly ox-tongue.
11	Arable field ploughed.
12	Improved grassland dominated by perennial rye grass, abundant white clover, frequent Yorkshire fog, occasional common mallow and dock.
13	Bare ground used as a track.
14	Improved grassland with caravans and tools. Dominated by perennial rye grass, abundant white clover, frequent greater plantain, ribwort plantain, common daisy and occasional dandelion.
15	Hedge dominated by conifers.
16	Row of conifer trees. Ground flora dominated by ivy.
17	Private garden with amenity grassland and scattered trees. Dominated by perennial rye grass, abundant red fescue, frequent common daisy and occasional dandelion. There was occasional field maple and birch trees scattered within the grassland.
18	Tree line of conifer trees.
19	Tall ruderal dominated great willowherb, abundant dock, locally abundant red fescue, frequent nettle and occasional hedge mustard.
20	Arable dominated by red fescue, abundant Yorkshire fog, occasional spear thistle, broad-leaved willowherb and ox-eye daisy.
21	Defunct hedge dominated by hawthorn, abundant hazel, blackthorn and rare oak.
22	Arable field ploughed.
23	Hedge dominated by hawthorn, frequent oak, occasional guelder rose and birch.
24	Hedge dominated by hawthorn and frequent oak.
25	As per target note TN 24.
26	Improved grassland dominated by red fescue, abundant perennial rye grass, frequent creeping thistle and dock.
27	Tall ruderal dominated by creeping
28	Arable dominated by perennial rye grass and Yorkshire fog.

29	Hedge dominated by brambles, abundant cock's-foot, occasional spear thistle, hawthorn and oak.
30	Dense scrub dominated by brambles, frequent common nettle and great willowherb.
31	Tall ruderal dominated by creeping thistle, abundant bramble, perennial rye grass and frequent nettle.
32	Rough unmown grassland.
33	Private garden dominated by perennial rye grass, occasional oak and rhododendron.
34	Hedge dominated by hawthorn and frequent ash.
35	Private garden with overgrown lawn dominated by perennial rye grass, abundant dandelion, frequent Yorkshire fog, dock, common nettle, occasional white dead nettle and spear thistle. Scattered trees included birch and apple.
36	Hedge with scattered trees dominated by hawthorn.
37	Hedge dominated by hawthorn, abundant blackthorn and frequent oak.

Site 6: Land east of Greens Farm Lane, west of Outwood Common Road, north of Outwood Farm Road

Target Notes	Description
1	Private garden with grassland and scattered trees. The grassland was dominated by perennial rye grass and abundant white clover. The scattered trees had occasional hawthorn, crack willow, birch, apple and ash.
2	Hedge dominated by hawthorn, abundant blackthorn and frequent rhododendron.
3	Hard standing with caravans parked.
4	Poor semi-improved grassland with scattered scrub dominated by cock's-foot, abundant great willowherb, young oak, frequent dock and creeping thistle.
5	Hedge with scattered trees dominated by blackthorn, abundant bramble, frequent hawthorn and occasional oak.
6	Hedge with trees dominated by bramble, abundant hawthorn, frequent oak, blackthorn, occasional elder, field maple, holly, dog rose and hazel.
7	Arable with reseeded grass dominated by perennial rye grass, abundant creeping thistle, frequent red fescue and creeping buttercup.
8	Mature oak trees with bat roost potential.
9	Hedge dominated by hawthorn, abundant blackthorn, bramble and frequent oak.

10	Improved grassland dominated by perennial rye grass and abundant red fescue.
11	Tall ruderal dominated by common nettle, abundant creeping thistle and occasional burdock.
12	Tall ruderal dominated by creeping thistle.
13	Dense scrub with trees dominated by hawthorn, abundant blackthorn, frequent oak and bramble.
14	Dense scrub with scattered trees dominated by hawthorn, abundant bramble, ivy, blackthorn, frequent oak, occasional ash and field maple.
15	Field margins abundant with perennial rye grass, cock's-foot, locally abundant creeping buttercup and occasional bent-grass.
16	As per TN 14 with rare crack willow and apple.
17	As per TN 14 with dominant blackthorn, occasional ash and rare crack willow.
18	Improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent dock and rare wild carrot. Hedge dominated by blackthorn, abundant bramble, frequent ash, occasional mature oak and rare crack willow.
19	Improved grassland dominated by perennial rye grass, abundant red fescue and frequent Yorkshire fog.
20	Improved grassland dominated by perennial rye grass, abundant cock's foot, great willowherb and frequent creeping thistle.
21	Dense scrub with scattered trees dominated by bramble and abundant oak.
22	Tall ruderal with dominant common nettle, abundant creeping thistle and frequent great willowherb.
23	As per TN 22 with rare butterfly-bush.
24	Dense scrub dominated by blackthorn, abundant bramble and occasional oak.
25	As per TN 24 with occasional field maple.
26	Dense scrub with dominant bramble, abundant blackthorn and frequent hawthorn.
27	Improved grassland dominated by red fescue and abundant perennial rye grass.
28	Dense scrub with scattered trees dominated by bramble, abundant blackthorn, frequent willow, hawthorn and occasional ash.
29	Semi-natural broadleaved woodland dominated by oak, blackthorn, ivy, abundant holly, bramble, occasional ash and rare redshank.
30	Dense scrub with scattered trees dominated by bramble, abundant oak and hawthorn.
31	Dense scrub with tall ruderal dominated by bramble, abundant hawthorn, frequent ash, blackthorn, field maple, occasional elder, hazel, rare apple and elm. Tall ruderal dominated by creeping thistle and frequent hogweed.

32	Dense scrub with scattered trees with dominant bramble, abundant blackthorn, frequent elm, occasional oak and elder.

Site 7: Land east of Frithwood Lane

Target Note	Description
1	Poor semi-improved grassland. Slightly rank structure suitable for reptiles. Dominated by cock's-foot, locally dominant nettle, abundant creeping thistle, frequent yarrow, abundant red fescue. Locally abundant ribwort plantain, abundant field speedwell.
2	Tall ruderal dominated by nettle with occasional bracken.
3	Scattered trees dominated by red oak.
4	Shorter grass sward to the south of the field.
5	Outgrown hedge. Holly, hawthorn, elm, hornbeam, oak, ash, elder all occasional to frequent.
6	Recently ploughed. Previously grassland – converting to arable?
7	Ditch dominated by greater willowherb. Trees rare oak.
8	Semi-natural broadleaved woodland. Canopy dominated by sweet chestnut, occasional beech, rare oak, abundant hornbeam. Shrub layer abundant hazel coppice, sweet chestnut coppice, rare hawthorn, holly, and rowan. Ground flora sparse but where present, dominated by bracken. Evidence of wood-bank around the edges of the woodland.
9	Mature oak. Field ploughed to within 0.5m of the trunk.

Site 8: Land West of Mountnessing Road, North of London Road and South of the Railway Line, Billericay

Target Note	Description
1	Species poor hedge with trees. Dominated by blackthorn. Occasional hawthorn, bramble. Trees rare oak. Mature. Brp features.
2	Arable field. Recently ploughed.
3	Species poor hedge. Dominated by blackthorn.
4	Improved grassland dominated by perennial rye-grass. Abundant cocks foot, Yorkshire fog. Occasional dandelion. Rare common thistle.

5	Hedge. Abundant privet, buckthorn, bramble. Rare holly, hazel
6	Outgrown hedge. Dominated by blackthorn. Frequent hawthorn. Frequent bramble. Rare field maple, oak.
7	Mosaic of walls, ornamental hedging, treelines and fences (backing onto private gardens).
8	Species poor hedge. Dominated by blackthorn. Rare bramble, elder, rose
9	Running water. Stream banks steep and overgrown. Vegetation dominated by tall ruderal including greater willowherb dominant. Ragwort rare. Cock's- foot abundant. Bristly ox-tongue rare. Figwort frequent. Pendulous sedge rare. Creeping thistle rare. Creeping bent-grass abundant. Dock sp. rare. Smooth hawks-beard rare. Creeping buttercup locally frequent. Cow parsley locally abundant. Channel vegetation abundant brooklime, occasional fools watercress.
10	Treeline. Dominated by Lombardy poplar. Occasional oak.
11	Stream vegetation - hard and soft rush rare. Fools watercress dominant.
12	Hedge blackthorn dominant.
13	Mature oak. High Brp.
14	Mature oak trees within hedge dominated by blackthorn.
15	Arable, recently ploughed.
16	Arable. Recently ploughed.
17	Hedge d blackthorn. Occasional hawthorn. Rare rose. Frequent bramble.
18	Defunct hedge with mature oak trees. Running water adjacent. No channel vegetation.
19	Running water.

Site 9: Land east of Tye Common Road and west of Wiggins Lane, Little Burstead (Slamons Farm/Richdan Farm)

Target Note	Description
1	Arable with abundant common nettle, creeping buttercup and occasional dock.
2	Hedgerow dominated hawthorn.
3	Hedgerow dominated by hawthorn, frequent bramble, ivy, occasional oak, sycamore and elder.
4	Semi-natural broadleaved woodland dominated by oak in the canopy. The shrub layer

	was dominated by hawthorn, frequent ash, occasional holly and hazel. Ground flora dominated by ivy and occasional bracken.
5	Hedgerow dominated by elm, abundant blackthorn, frequent bramble, occasional field maple, holly and oak. .
6	Hedgerow dominated by conifer.
7	Hedgerow dominated by hawthorn.
8	Hedgerow dominated by hawthorn, abundant field maple and occasional oak.
9	Amenity grassland used as a footpath. Dominated by perennial rye grass and abundant white clover. Regularly mown.
10	Hedgerow dominated by blackthorn.
11	Improved grassland dominated by perennial rye grass, abundant creeping buttercup and frequent bristly ox-tongue.
12	Poor semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog, frequent dandelion, occasional bristly ox-tongue and hawkbit.
13	Hedgerow dominated by blackthorn and abundant hawthorn.
14	Poor semi-improved grassland dominated perennial rye grass, abundant dock creeping thistle, bristly ox-tongue, frequent creeping buttercup, occasional common nettle, spear thistle and rare vetch sp.
15	West ditch dries out.
16	Field margin comprised of locally abundant red fescue, frequent creeping buttercup, vetch and occasional umbellifers.
17	Dense scrub dominated by bramble, abundant creeping thistle and occasional great willowherb.
18	Dense scrub dominated by bramble and abundant common nettle.
19	Improved grassland dominated by perennial rye grass and creeping buttercup. Scattered scrub included dominant blackthorn, abundant hawthorn and occasional crack willow.
20	Dense scrub dominated by blackthorn and occasional ash.
21	Dense scrub dominated by bramble.
22	Field margin dominated by cock's-foot and abundant cleaver.
23	Improved grassland dominated by perennial rye grass and occasional cleaver.
24	Mature oaks with bat roost potential. Hedge as per TN 5.
25	Vegetated ditch dominated with perennial rye grass, abundant common nettle, cleaver, and occasional vetch sp.
26	Field margins dominated by perennial rye grass and frequent ground ivy.

27	Hedge dominated by blackthorn and occasional oak.
28	Treeline dominated by oak and frequent blackthorn.
29	Poor semi-improved grassland dominated perennial rye grass, abundant creeping buttercup, white clover and frequent moss.
30	CHECK TN
31	Poor semi-improved grassland dominated perennial rye grass, abundant common daisy, frequent white clover, occasional dandelion and creeping buttercup. Patches of bare ground to the east of the horse paddock.
32	Hedge dominated by blackthorn.

Site 10: Land north of Clockhouse Road/Tye Common Road, east of Wiggins, west of Little Burstead Common

Target Note	Description
1	Amenity grassland dominated by creeping bent, abundant red fescue, frequent annual meadow grass, locally frequent white clover and occasional dandelion.
2	Semi-improved grassland mown regularly with scattered trees. Grassland as per TN 1. Scattered scrub included frequent gorse and occasional ash, oak and hornbeam.
3	As per TN 1.
4	Semi-improved grassland with a rough structure dominated creeping bent, abundant red fescue, creeping buttercup and creeping thistle, and frequent cock's-foot. Scattered scrub included occasional oak and birch sp, and rare sycamore.
5	Scattered scrub along the bank of the ditch included dominant broom, abundant oak, and locally abundant bramble.
6	Scattered scrub along the ditch abundant with blackthorn, frequent bramble and bracken, and occasional oak.
7	Rough semi-improved grassland dominated red fescue, abundant perennial rye grass, abundant creeping bent, occasional vetch sp and rare cleaver. Scattered scrub abundant with blackthorn, and ash, and frequent oak.
8	AS per TN 1.
9	Dense scrub dominated by bramble and abundant bracken.
10	Dense scrub dominated by hawthorn, abundant crack willow, frequent hazel. Log pile adjacent to scrub.
11	Rough semi-improved grassland dominated by creeping bent, abundant couch-grass, locally abundant vetch, frequent creeping buttercup and occasional creeping thistle. Scattered scrub included abundant ash, frequent gorse and birch, and rare butterfly-

	bush,
12	Short regularly mown grassland with scattered scrub. Species included occasional ash, hornbeam and birch sp.
13	Rough grassland with scattered trees dominated by perennial rye grass, abundant creeping buttercup, frequent dock and cock's-foot, and occasional creeping thistle. Scattered scrub included dominant oak, frequent blackthorn and occasional ash.
14	Scattered scrub with tall ruderal dominated by bramble and abundant creeping thistle.
15	Rough grassland with scattered scrub. Grassland dominated by cock's-foot, abundant creeping thistle and occasional great willowherb. Scrub species included locally abundant snowberry, frequent oak, occasional elder and rare dog rose.
16	As per TN 1.
17	Rough grassland dominated by couch-grass and occasional great willowherb. Scattered scrub dominated by blackthorn, abundant oak and rare willow sp.
18	As per TN 7.
19	Dense scrub dominated by bramble, abundant willow, occasional oak and sycamore.
20	Semi-improved grassland with a short structure. Abundant creeping buttercup, frequent ribwort plantain, goose-foots and soft rush.
21	Rough grassland with scattered scrub dominated by red fescue, abundant creeping buttercup, creeping thistle and oak regeneration.
22	Un-vegetated ditch with abundant oak and blackthorn
23	Pond margins dominated by reed mace.
24	Island in the middle of the pond, included gorse and blackthorn.
25	Scattered scrub dominated by field maple and sycamore.
26	Rough semi-improved grassland with scattered scrub. Grassland dominated perennial rye grass, abundant red fescue, creeping thistle, willowherb and moss, locally frequent vetch and occasional soft rush. Scrub abundant with bramble, frequent oak, gorse and occasional blackthorn.
27	As per TN 26.
28	Scrub dominated by blackthorn, abundant oak, frequent holly and bramble, and occasional crack willow.
29	Pond vegetated with reed mace and common reed.
30	Scrub dominated by blackthorn, frequent bramble and hawthorn.
31	Pond surrounded by woodland. Canopy dominated by oak; shrub layer dominated by blackthorn and bramble, locally frequent holly, occasional hawthorn and hornbeam; and ground layer dominated by bare ground, frequent ivy, and red fescue along the boundaries. A number of veteran trees,

Site 11: Land between Outwood Farm Road and Sunnymede

Target Note	Description
1	Manmade stream.
2	Semi-natural broadleaved woodland dominated by oak and abundant hazel. Shrub layer dominated by hawthorn, abundant ash regeneration, field maple and frequent holly. Ground flora dominated by ivy, occasional bramble and herb Robert.
3	Semi-natural broadleaved woodland dominated by hazel, abundant hawthorn and blackthorn. Ground flora abundant with ivy and frequent herb Robert.
4	Semi-natural broadleaved woodland dominated by ash. The shrub layer was abundant with hawthorn and occasional field maple. Ground flora was dominated by abundant ivy, frequent herb Robert and occasional bindweed.
5	Arable field dominated by creeping buttercup, abundant *Brassica sp* and Italian rye grass.
6	Ornamental trees.
7	Locally abundant perennial rye grass.
8	Hedge dominated by blackthorn and abundant bramble.
9	Improved grassland dominated by perennial rye grass.
10	Arable dominated by *Brassica sp* and abundant creeping thistle.
11	Hedge dominated by blackthorn and conifer.
12	Hedge with scattered trees dominated by oak, abundant field maple, blackthorn, frequent bramble and ivy.
13	Dry ditch with tall ruderal and hedge dominated by great willowherb, abundant bramble and frequent dock.
14	Hedge dominated by field maple, abundant hawthorn, frequent oak and bramble.
15	Hedge dominated by bramble, abundant common nettle, bristly ox-tongue, frequent blackthorn, dog rose and occasional horsetail.
16	Arable dominated by creeping buttercup, abundant brassiccas, locally abundant shepherd's purse and locally frequent Italian rye grass.
17	Badger tracks.
18	Arable dominated by Italian rye grass.
19	Hedge with scattered trees dominated by hawthorn, abundant field maple, blackthorn, ivy, frequent oak, occasional dog rose, ash and broad-leaved dock.
20	Entrance to the field has bare ground.

21	Hedge with scattered trees and tall ruderal. Dominated by common nettle, abundant great willowherb, frequent ivy, blackthorn, occasional hawthorn, elder, oak, crack willow, common mallow, rare red campion and white dead nettle. Water vole potential along ditch with running water.
22	Tall ruderal with scattered trees dominated by common nettle, abundant bramble, frequent hogweed and rare oak.
23	Arable with dominant broad-leaved dock, abundant shepherd's purse, bristly ox-tongue, fat hen, frequent cock's-foot and occasional ox-eye daisy.
24	Orchard planting.
25	Tall ruderal and scattered scrub dominated by common nettle, abundant bramble and occasional ash.
26	Badger latrine next to semi-natural broadleaved woodland. Woodland dominated by oak and occasional elder. Shrub layer dominated by hawthorn. Ground flora dominated by ivy and frequent bramble.
27	Evidence of badger.
28	Hedge dominated by bramble, abundant blackthorn and frequent ash.
29	Hedge dominated by bramble, locally abundant bracken, frequent common nettle and occasional Traveller's joy.
30	Arable dominated by redshank, abundant Italian rye grass, locally frequent ox-eye daisy, broad-leaved willowherb and occasional greater plantain.
31	Hedge dominated by privet abundant field maple and frequent bramble.
32	Mosaic of tall ruderal and improved grassland dominated by common nettle, abundant false-oat grass, locally abundant hedge bindweed and frequent scarlet pimpernel, cock's foot.
33	Dense scrub with scattered trees was dominated by hawthorn, abundant elder, occasional ash, oak and rare field speedwell.
34	Arable dominated by Italian rye grass, abundant shepherd's purse, locally abundant goosefoot, frequent brassicca and redshank.
35	Dense scrub and tall ruderal dominated by bramble, nettle, frequent osier willow blackthorn and occasional teasel.

Site 12: Land East of Tyefields, South of Burnt Mills Road, Basildon

Target Note	Description
1	Rank semi-improved neutral grassland. Local resident confirms reptiles present (including adder). Dominated by cock's-foot, abundant false oat-grass, crested dog's-tail, frequent fleabane. Ragwort frequent to locally abundant. Occasional meadow buttercup. Rare vetch sp., rare tufted hair-grass, occasional white clover, rare

	cotoneaster, field bindweed, bristly ox-tongue. Rare nettle, teasel. Locally abundant creeping tormentil. Rare red clover.
2	Species as per TN1
3	Specie as per TN1. Cut short for hay annually (landowner).
4	Hedge dominated by blackthorn.
5	semi-natural broadleaved woodland abundant sycamore, oak, cherry, silver birch. Shrub layer dominated by blackthorn and hawthorn. No ground flora.
6	Hedge with trees, species as per previous TN, with lime and field maple.
7	Tall ruderal dominated by yarrow and bristly ox-tongue. Firethorn hedging to north.
8	Council-owned open space. Mosaic of semi-natural broadleaved woodland dominated by willow and sycamore, and occasional oak and ash. Improved grassland, scrub dominated by blackthorn and hawthorn.
9	Pond. Bank vegetation dominated by Australian swamp stonecrop, rare water-mint, occasional hard rush, locally frequent bulrush, locally frequent ornamental grasses, rare yellow flag, locally frequent vetch sp., occasional hard rush and soft rush, locally abundant broadleaved pondweed, occasional false fox sedge, locally abundant red clover, Nuttall's waterweed rare.
10	Informal grazing (ponies). Dominate by perennial rye-grass, abundant white clover, occasional greater plantain, meadow buttercup.
11	Band of semi-natural broadleaved woodland dominated by sycamore, Norway maple. Shrub layer dominated by privet, ground flora bare.
12	Grazing paddocks. No access at time of survey.
13	Recently ploughed and drilled.
14	Semi-mature elm.
15	Hawthorn scrub surrounding ephemeral pond. No water at time of survey.
16	Dominated by Yorkshire fog, frequent
17	Mature double hedge. Dominated by blackthorn and hawthorn with several mature oaks present.
18	As per TN17.
19	Slightly rank improved grassland. Will become suitable for reptiles if left to grow to a slightly longer length. Dominated by perennial rye-grass with abundant Italian rye-grass. Scentless mayweed rare.
20	Pond surrounded by blackthorn scrub and mature oak trees with high BRP.
21	Football pitch.
22	Dense hawthorn scrub with scattered trees comprising oak, cherry and apple all occasional.

23	Slightly rank poor semi-improved grassland suitable for reptiles. A dense area of scrub dominated by hawthorn and with several mature oak trees. Grassland dominated by perennial rye-grass with abundant cock's-foot and field barley. Ribwort plantain and dock sp. present but rare.
24	Semi-natural broadleaved woodland dominated by oak. Shrub layer dominated by hawthorn and blackthorn. Ground flora absent.
25	Rank poor semi-improved grassland with scattered trees. Dominated by false oat-grass with abundant creeping bent, locally abundant creeping tormentil. Scattered trees included occasional semi-mature oak.
26	As per TN24.
27	As per TN25. Abandoned playing field.
28	As per TN25.

Site 13: Land north of London Road, east of Ilfracombe Avenue and west of Pound Lane, Bowers Gifford

Target Note	Description
1	Poor semi-improved grassland dominated by perennial rye grass, abundant common daisy and frequent common nettle.
2	Poor semi-improved grassland dominated by perennial rye grass, locally abundant common nettle, bramble, frequent greater plantain, occasional creeping buttercup and dandelion.
3	Hedge with scattered trees dominated with bramble, abundant blackthorn, frequent dog rose, occasional elder, ash and oak.
4	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover, locally frequent common nettle, occasional dandelion and creeping buttercup.
5	Hedge with scattered trees dominated by blackthorn, abundant bramble, occasional oak, ash and rare sycamore.
6	Poor semi-improved grassland dominated by perennial rye grass, abundant ox-eye daisy and frequent common daisy.
7	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover, creeping buttercup, frequent dandelion, crested dog's tail, cat's-tail and Yorkshire fog.
8	Hedge with scattered trees dominated by blackthorn, abundant hawthorn, frequent field maple, occasional pear tree, oak and elm. Bat roost potential in mature oaks.
9	Dense scrub dominated by bramble, abundant snowberry, ivy, frequent blackthorn, hawthorn and occasional oak.

10	Tall ruderal dominated by fat hen, abundant common nettle, frequent broad-leaved dock and rare elder.
11	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover, frequent common daisy and yarrow.
12	Semi-improved grassland with scattered scrub and tall ruderal dominated by bramble, blackthorn, abundant common nettle, ivy, locally frequent vetch, occasional elm, crack willow and rare chestnut.
13	As per TN 12.
14	Amenity grassland dominated by perennial rye grass, abundant white clover, frequent dandelion and smaller cat's-tail.
15	Hedge with scattered trees dominated by bramble, frequent field maple, ash and occasional elm.
16	Semi-improved grassland with tall ruderal dominated by perennial rye grass, abundant creeping buttercup, dock, white clover, frequent bristly ox-tongue, ox-eye daisy, red clover occasional creeping thistle and goat's rue.
17	Hedge dominated by bramble, abundant dog rose, occasional elm, oak, ash and rare rhododendron.
18	Hedge dominated by hawthorn, abundant field maple, frequent dog rose, occasional birch and rare sycamore.
19	Defunct hedge dominated by dog wood, frequent ash, hawthorn and yew.
20	Hedge with scattered trees dominated by elm, frequent dog rose, occasional crack willow and sycamore.
21	Scrub with ornamental planting dominated by rhododendron, abundant ivy, frequent hawthorn and rare oak.
22	Rough grassland dominated by perennial rye grass, abundant couch, frequent bristly ox-tongue, goosefoot and occasional red dead nettle. Surrounded by hedges dominated with cotoneaster.
23	Dense scrub dominated by bramble, abundant field maple, frequent hawthorn, elm, occasional elder and sycamore.
24	Poor semi-improved grassland grazed by horses.
25	House construction with ephemeral plants.
26	Improved grassland dominated by perennial rye grass, abundant white clover, creeping buttercup and occasional ragwort.
27	Hedge with scattered trees dominated by bramble and hawthorn.
28	Improved grassland dominated by perennial rye grass, abundant Yorkshire fog and frequent creeping buttercup.
29	Hedge dominated by blackthorn, abundant hawthorn, frequent bramble and occasional elm.

30	Tall ruderal dominated by common nettle, abundant creeping thistle and frequent dock *sp*.
31	Hedge with scattered trees dominated by blackthorn, abundant hawthorn and occasional ash.
32	Row of trees dominated by ash.
33	Semi-improved grassland with scattered scrub and tall ruderal dominated by bramble, abundant goosefoot, frequent creeping thistle and rare soft rush.
34	Semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent vetch, white clover, Yorkshire fog, locally frequent red clover and occasional bristly ox-tongue.
35	Semi-improved grassland dominated by perennial rye grass, abundant bramble, creeping buttercup, locally abundant common nettle, frequent creeping thistle, crested dog's-tail and occasional Timothy.
36	Improved grassland mown regularly. Dominated by perennial rye grass and abundant cock's-foots.
37	Semi-improved grassland dominated by perennial rye grass, abundant vetch, frequent bristly ox-tongue, white clover, occasional Yorkshire fog and red clover.
38	Hedge dominated by blackthorn, abundant elm, frequent hawthorn and occasional dog rose.
39	Hedge dominated by bramble, abundant elm, frequent hawthorn and blackthorn.
40	Locally abundant red clover.
41	Hedge dominated by blackthorn, abundant hawthorn, occasional oak and elm.
42	Dense scrub dominated by hawthorn.
43	Hedge dominated by elm, abundant hawthorn and blackthorn.
44	Semi-improved grassland dominated by perennial rye grass, abundant cock's-foot and locally abundant red fescue.
45	Dense scrub with scattered trees dominated by blackthorn, abundant bramble, frequent hawthorn and occasional oak.
46	Hedge dominated by bramble, abundant elm, frequent ivy, frequent field maple, occasional oak and ash.
47	Semi-improved grassland dominated by perennial rye grass, abundant cock's foot and frequent bristly ox-tongue.
48	Hedge dominated hawthorn, abundant blackthorn and frequent elm.
49	Semi-improved grassland dominated perennial rye grass, locally abundant blackthorn, frequent hedge bindweed, locally frequent great willowherb and occasional ash.
50	Tall ruderal with scattered scrub dominated by bramble,, abundant creeping thistle and great willowherb.

Site 14 Land west of Wickford, west of Sudgen Avenue and North of London Road

Target Note	Description
1	Poor semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent bristly ox-tongue and occasional dandelion.
2	Tall ruderal dominated by bristly ox-tongue, abundant creeping thistle, locally abundant common nettle, frequent dock sp, locally frequent goose-foot, occasional teasel, vetch and rare fat hen.
3	Dense scrub dominated by elm and abundant bramble.
4	Dry ditch dominated by great willowherb, abundant common nettle, locally abundant goose-foot and Himalayan balsam, frequent bramble, creeping thistle, elm and occasional reed mace.
5	Tall ruderal with scattered trees dominated by, abundant dock, frequent Himalayan balsam, occasional ash and oak.
6	Children's playground. Amenity grassland dominated perennial rye grass, abundant white clover, locally abundant yarrow and frequent dandelion.
7	Dense scrub dominated by bramble, abundant hawthorn, elder and frequent common nettle.
8	Dense scrub dominated by hawthorn, abundant blackthorn, ivy, frequent bramble, field maple, ash regeneration, common nettle, locally frequent wood avens and occasional oak.
9	Hedgerow dominated by blackthorn, abundant hawthorn, bramble and occasional wild plum.
10	Hedge dominated by conifer.
11	Amenity grassland dominated by perennial rye grass, abundant white clover and frequent creeping buttercup.
12	Hedgerow dominated by blackthorn and abundant bramble.
13	Mature oak trees with bat roost potential.
14	Dense scrub dominated by blackthorn.
15	As per TN 14 with abundant elm, bramble, frequent hawthorn and occasional oak.
16	As per TN 15
17	Treeline dominated by conifer.

18	Small vegetable patch.
19	As per TN 10.
20	Semi-improved grassland dominated by perennial rye grass, abundant white clover, creeping buttercup and frequent common daisy.
21	Cluster of conifer trees.
22	Grassland mown with areas of rough grassland. Dominated by bent-grass, abundant false-oat grass, creeping thistle, frequent bristly ox-tongue and occasional goose foot.
23	Dense scrub dominated by blackthorn, abundant bramble, common nettle, frequent oak and occasional teasel.
24	Pond with vegetated edges, including soft rush.
25	Pond with no vegetation.
26	Semi-improved grassland dominated by bent-grass, abundant false-oat grass, frequent white clover, dock, occasional smaller cat's-tail, bristly ox-tongue and rare vetch sp.
27	Tall ruderal surrounded the dilapidated greenhouse. Tall ruderal dominated by great willowherb, abundant dock and frequent teasel. The greenhouse was overgrown with tall ruderal vegetation and scrub.
28	Semi-improved grassland dominated by perennial rye grass, abundant common daisy, frequent creeping buttercup, white clover, occasional red dead-nettle, bristly ox-tongue, creeping thistle and rare ragwort.
29	Treeline dominated by conifer.
30	Wet ditch running slowly. Hedgerow abundant with hawthorn, ivy, umbellifers, common nettle, occasional, ash, blackthorn, and oak.
31	Tall ruderal dominated by common nettle, frequent great willow and bramble.
32	Hedge with trees dominated by bramble, abundant blackthorn, occasional dog rose, rare elder, oak and crack willow.
33	Treeline dominated by conifer.
34	Dense scrub dominated by bramble, abundant elder, dogwood, frequent hawthorn, occasional oak, ash, and crack willow. Ground flora dominated by ground ivy, abundant common nettle, umbellifers and occasional dock sp. Animal track down to the river.
35	Tall ruderal dominated by common nettle.
36	Poor semi-improved grassland abundant with dock, locally abundant creeping buttercup, frequent tufted hair grass and white clover.
37	Dense scrub dominated by bramble, abundant hawthorn, frequent great willowherb and teasel.
38	Semi-improved grassland dominated perennial rye grass, abundant bent-grass, locally abundant red dead-nettle, frequent creeping buttercup, crested dog's tail, Timothy, locally frequent common nettle, occasional cock's-foot and white clover.

39	Pond chocked with vegetation, such as reed mace and soft rush.
40	Large log pile
41	As per TN 29
42	Tall ruderal with scattered scrub dominated by common nettle, , abundant bramble, frequent cleaver. Occasional red dead-nettle and rare crack willow.
43	Hedgerow dominated by blackthorn and abundant bramble.
44	Cluster of trees dominated by field maple
45	Tall ruderal dominated by common nettle.
46	Treeline dominated by sycamore.
47	Tall ruderal with scattered scrub dominated by common nettle, abundant umbellifers, bramble, frequent creeping thistle and occasional teasel.
48	Cluster of conifer trees.

Site 15: Land at Bradfields Farm

Target Note	Description
1	Poor semi-improved grassland. Dominated by perennial rye-grass, abundant cock's-foot and Yorkshire fog, abundant meadow buttercup and white clover, rare sorrel, doves-foot cranesbill.
2	Improved grassland. Dominated by perennial rye-grass. Sward appeared dead, potentially being converted to arable.
3	As per target note (TN) 2. Pasture.
4	Badger dung pit.
5	Evidence of badger feeding.
6	Farmyard (no access at time of survey).
7	Poor semi-improved grassland. Horse paddock heavily grazed. Perennial rye-grass dominant, abundant white clover, occasional false oat-grass, occasional annual meadow-grass to edges, rare dandelions and doves-foot cranesbill.
8	As per TN7 but with slightly longer sward length.
9	As per TN7 but with locally abundant vetch.
10	Improved grassland dominated by perennial rye-grass. Abundant white clover and dandelions.

11	Re-seeded with perennial rye-grass and improved (evidence of muck-spreading).
12	Horse paddock supporting improved grassland as per TN11.
13	Pond – no aquatic vegetation. Bank vegetation dominated by poor semi-improved grassland species as previously noted.
14	Bunded dumping area.
15	Scattered trees including holm oak, willow and fruit trees. Some trees with ivy cover.

Site 16: Land south of Dunton Road, Laindan

Target Note	Description
1	Defunct hedge dominated by hawthorn, frequent elm, blackthorn and occasional oak.
2	Tall ruderal dominated by common nettle, abundant umbellifer and occasional bristly ox-tongue.
3	Defunct hedge dominated by elm and frequent ash.
4	Hedge dominated by conifer and occasional elm.
5	Hedge dominated by elm.
6	Hedge dominated by hawthorn and abundant elm.
7	As per TN 7 with frequent ivy, occasional holly and oak.
8	Poor semi-improved grassland with tall ruderal dominated by common nettle, abundant perennial rye grass, ivy, frequent cleaver, locally frequent ribwort plantain and occasional spear thistle.
9	Poor semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog, locally abundant red clover, frequent creeping buttercup and red fescue.
10	Defunct hedge dominated by hawthorn, abundant blackthorn, frequent field maple and occasional oak.
11	As per TN 10.
12	Hedge with scattered trees dominated by blackthorn, frequent poplar, conifer, occasional hawthorn and oak.
13	Hedge dominated by elm and frequent sycamore.
14	Hedge dominated by bramble, frequent elm, occasional oak, field maple, and hawthorn.
15	Hedge dominated by blackthorn, abundant hawthorn, frequent sycamore, oak, occasional spindle and rare ash.

16	Amenity grassland dominated by perennial rye grass, abundant Yorkshire fog, frequent hawkbit, locally frequent red clover and occasional dandelion.
17	Treeline.
18	Hedge dominated by blackthorn, frequent oak, dog wood, field maple and hawthorn.
19	Poor semi-improved grassland dominated by perennial rye grass, frequent common nettle, bristly ox-tongue, occasional tufted-hair grass and rare common knapweed.
20	Mature oak with bat roost potential.
21	Occasional Italian rye grass.
22	As per TN 6.
23	Hedge dominated by hawthorn, abundant blackthorn, frequent bramble, crack willow, occasional sycamore, dog rose. Rare polar and horse chestnut.
24	Hedge dominated by hawthorn and blackthorn.
25	Dense scrub dominated by blackthorn, frequent sycamore, crack willow, hawthorn, occasional ash and poplar.
26	No access. Private residences with amenity grassland, bare ground and dense scrub.
27	No direct access. Part of private residences. Habitats include dense scrub with scattered trees and tall ruderal dominated by bramble, abundant hawthorn, fleabane, great willowherb, frequent poplar and occasional ash.
28	Hedge with scattered trees dominated by blackthorn, abundant hawthorn, occasional field maple, sycamore and oak
29	Poor semi-improved grassland dominated by perennial rye grass, abundant common nettle, dock and umbellifer.
30	Poor semi-improved grassland dominated by perennial rye grass, abundant bryophyte *sp* and frequent cleaver.
31	Dense scrub with scattered trees dominated by blackthorn and abundant oak.
32	Hedge dominated by hawthorn, abundant blackthorn, hazel, frequent oak, field maple, occasional ash and guelder rose.
33	Hedge dominated by hawthorn, abundant field maple, frequent ash, snowberry and rare elder.

Site 17: Land at Benson's Farm, north of Wash Road

Target Note	Description

1	Amenity grassland with tall ruderal dominated by perennial rye grass, abundant common nettle and wall barley.
2	Dense scrub dominated by bramble, abundant blackthorn, great willowherb and common nettle.
3	Poor semi-improved grassland with scattered trees dominated by perennial rye grass, abundant couch, frequent false-oat grass, occasional ash and crack willow.
4	Improved grassland dominated by perennial rye grass, abundant cock's-foot, Yorkshire fog, frequent creeping buttercup and occasional bristly ox-tongue.
5	Tall ruderal dominated by great willowherb, abundant creeping thistle and frequent common nettle.
6	Poor semi-improved grassland with tall ruderal dominated by perennial rye grass, abundant couch, frequent common nettle and Italian rye grass.
7	Hedgerow dominated by blackthorn.
8	Wet ditch dominated by common nettle and abundant ivy. Signs of badger noted near the ditch. There is also potential for water vole.
9	Poor semi-improved grassland dominated by perennial rye grass, abundant couch and frequent tufted-hair grass.
10	Defunct hedge dominated by elm.
11	Wet ditch dominated by great willowherb and abundant ground ivy
12	Defunct hedge dominated by elm, frequent ash, occasional oak and elder.
13	Amenity grassland dominated by perennial rye grass and frequent couch.
14	Arable partly used to grow pumpkins. The rest of the area is dominant with perennial rye grass, abundant bristly ox-tongue, frequent Brassica *sp* and creeping thistle.
15	Defunct hedge dominated by elm, abundant blackthorn and occasional field maple.
16	Defunct hedge dominated by blackthorn, abundant bramble, elm, frequent hawthorn and occasional sycamore.
17	As per TN 10.
18	Poor semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent bent-grass, locally frequent bramble, hedge bindweed and occasional bristly ox-tongue.
19	Hedge dominated elm, abundant blackthorn and occasional field maple.
20	Poor semi-improved grassland with scattered trees dominated by perennial rye grass, abundant sycamore, couch, frequent horse chestnut, locally frequent bramble, occasional ash, elder and oak.
21	Scattered trees dominated by ash and occasional oak.
22	Dense scrub with scattered trees dominated by hawthorn, abundant bramble, field

	maple, ash and occasional crack willow. Potential otter using the River Couch.

Site 18: Land west of South Green

Target Note	Description
1	Arable dominated by perennial rye grass, abundant Yorkshire fog.
2	Tall ruderal dominated by common nettle, abundant creeping thistle, locally abundant bramble, locally frequent cock's-foot, occasional bristly ox-tongue, Timothy and rare ash regeneration.
3	Hedge dominated by blackthorn, abundant ash, hawthorn, locally abundant bracken, frequent oak, bramble and occasional field maple.
4	Hedge with tall ruderal dominated by bramble, abundant common nettle, horsetail, frequent bracken and occasional creeping thistle.
5	Hedge dominated by bramble, abundant oak, blackthorn, frequent hawthorn, occasional ash and field maple.
6	Bare ground.
7	Defunct hedge with scattered bracken dominated by bracken and abundant blackthorn.
8	Defunct hedge with scattered bracken dominated by bracken, abundant bramble, frequent tufted-hair grass and occasional common nettle.
9	Defunct hedge dominated by field maple, abundant elm, bramble, locally abundant holly and rare wild plum.
10	Tall ruderal and bracken dominated by bracken and abundant fat hen.
11	Dry ditch with dominant tufted-hair grass.
12	Semi-improved grassland dominated by perennial rye grass, frequent red clover, occasional vetch field bindweed, meadow buttercup and creeping thistle.
13	Hedge dominated by blackthorn, abundant oak, bramble, frequent ash and occasional common nettle.
14	Tall ruderal with scattered trees dominated by great willowherb, abundant common nettle, horsetail and frequent crack willow.
15	Reservoir with abundant reed mace.
16	Tall ruderal dominated by great willowherb and frequent horsetail.
17	Treeline dominated by conifer.
18	Improved grassland dominated by perennial rye grass and abundant red fescue.

19	Hedge dominated by hawthorn, abundant blackthorn, occasional oak and ash.
20	Semi-natural broadleaved woodland dominated by ash, abundant birch and frequent oak in the canopy layer. The shrub layer is dominated by hawthorn, abundant field maple, frequent holly and occasional rhododendron. Ground flora dominated by ivy.
21	Semi-improved grassland with scattered scrub dominated by cock's-foot, abundant creeping buttercup, locally abundant vetch, frequent tufted-hair grass and occasional agrimony. Scrub dominated by hawthorn, abundant bramble and occasional ash.
22	Poor semi-improved grassland with tall ruderal and scattered scrub dominated by common nettle, creeping thistle, abundant bramble and blackthorn.
23	Poor semi-improved grassland dominated by perennial rye grass, abundant creeping thistle, occasional crested dog's-tail and yarrow.
24	Rougher poor semi-improved grassland dominated by perennial rye grass, abundant white clover, frequent bent-grass, smaller cat's-tail, crested dog's-tail and rough hawkbit.
25	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover, frequent ribwort plantain
26	Tall ruderal dominated by common nettle, abundant goosefoot and frequent creeping thistle.
27	Poor semi-improved grassland dominated by perennial rye grass, abundant dock and creeping buttercup.
28	Row of trees dominates by conifer.
29	Tall ruderal dominated by common nettle.
30	Dense scrub with scattered trees dominated by bramble and abundant oak.
31	Dense scrub with scattered trees and tall ruderal. Dominate bramble, abundant blackthorn, locally abundant great willowherb, frequent common nettle, hawthorn, occasional oak, fleabane and rare soft rush.
32	Amenity grassland dominated perennial rye grass, and abundant Yorkshire fog.
33	Poor semi-improved grassland with scattered trees and scrub dominated by perennial rye grass, abundant cock's-foot, frequent fleabane, poplar, willow *sp* and occasional butterfly-bush.
34	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover, locally abundant white dead nettle, frequent dandelion, common daisy, occasional creeping buttercup, ribwort plantain, yarrow and hedge mustard.
35	Dense scrub dominated by brambles.
36	Poor semi-improved grassland with tall ruderal dominated by perennial rye grass, abundant common nettle, white dead nettle, frequent creeping buttercup, fleabane and occasional hedge mustard.
37	Poor semi-improved grassland dominated by perennial rye grass, abundant creeping buttercup, locally abundant common nettle and frequent dock *sp*.

38	Dense scrub dominated bramble and abundant blackthorn.
39	Poor semi-improved grassland dominated by perennial rye grass, abundant creeping buttercup and frequent cock's-foot.
40	Poor semi-improved grassland with tall ruderal dominated by perennial rye grass and frequent dock *sp*.
41	Dense scrub dominated by bramble, abundant common nettle, frequent creeping buttercup, red dead nettle, occasional crack willow and fat hen.
42	Large pile of leaf and branch matter.
43	Dense scrub dominated by bramble, occasional conifer and rare elder/
44	Treeline dominated by conifer and occasional birch and sycamore.
45	Treeline dominated by poplar.
46	Poor semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent Timothy, creeping buttercup, locally frequent creeping thistle and occasional bent-grass. Scattered trees dominated by oak, walnut tree, abundant crack willow and rare apple.
47	Tall ruderal dominated by common nettle with scattered scrub dominated by bramble, abundant hawthorn, rare elder and cherry *sp*.
48	Dried pond.
49	Hedge dominated by hawthorn, abundant blackthorn, frequent elm and bramble.
50	Scattered scrub with tall ruderal dominated by common nettle, abundant great willowherb, frequent elm and horsetail. Water vole potential.
51	Tall ruderal dominated by nettle, frequent bramble and occasional elm. Badger sign noted here.
52	Hedge with abundant cotoneaster, rhododendron, occasional holly and elder.
53	Scattered oaks with bat roost potential.
54	Dense scrub dominated by bramble and abundant blackthorn.
55	Hedge with scattered trees dominated by oak, abundant elm, blackthorn, hawthorn and occasional field maple.

Site 19: Land North of Billericay, West of Stock Road

Target Note	Description
1	Improved grassland. Dominated by perennial rye-grass and cock's-foot. Occasional meadow buttercup. Rare dandelion.

2	Scrub hedge with trees. Dominated by bramble, abundant hawthorn. Trees dominated by oak and rare willow – with high BRP. Two potentially veteran trees (oaks).
3	Pond. Marginal vegetation dominated by reed mace.
4	Golf course with scattered trees and hedges. No access at time of survey.
5	Poor semi-improved grassland. Abundant false oat-grass, cock's foot, occasional ribwort plantain, timothy and cow parsley.
6	Hawthorn hedge.
7	Hawthorn hedge with scattered trees
8	Orchard.

Site 20: Land North-east of Potash Road

Target Note	Description
1	Mosaic of scattered scrub with scattered trees and bare ground. Scrub dominated by bramble, abundant nettle, abundant field bindweed, rare hawthorn and elder. Trees occasional ash, sweet chestnut, hornbeam, birch, crack willow. Ground flora locally frequent to locally dominant nettle, rare male fern, creeping buttercup, red deadnettle, soft rush, hogweed. Locally dominant cock's-foot.
2	Several brash piles. Tree-creeper noted.
3	Badger dungpit.
4	Badger latrine. Three pits.
5	Semi-improved neutral grassland. Red fescue dominant. Abundant cock's-foot, creeping bent, false oat-grass, ribwort plantain. St. John's wort rare. Occasional oak saplings, locally abundant creeping thistle, occasional ragwort, rare nettle, occasional sweet vernal-grass, rare brome. Several anthills present throughout this area and mammal paths also present. Grassland has a rank, tussocky structure suitable for reptiles.
6	Patch of blackthorn scrub.
7	Hedge with abundant blackthorn, occasional apple, holly, bramble hazel, oak, hawthorn and laurel.
8	Bracken stand along road edge.
9	Tree line – mature oak with high BRP.
10	Semi-improved neutral grassland. Alpaca-grazed. Dominated by red fescue. Abundant creeping bent, occasional Yorkshire fog, frequent yarrow, frequent white clover,

	frequent meadow buttercup, occasional mouse-ear and self-heal.
11	Semi-natural broadleaved woodland. Dominated by oak with rare silver birch. Shrub layer dominated by hawthorn, occasional elder, rare Prunus sp. Ground flora dominated by nettle, rare foxglove, male fern, bramble. Mature trees with high BRP.
12	Evidence of badger.
13	semi-natural broadleaved woodland. Canopy dominated by oak. Shrub layer poor but where present dominated by hawthorn with rare holly. Ground flora sparse. Rare cow parsley.
14	Poor semi-improved grassland. Dominated by cock's-foot and red fescue. Occasional false oat-grass, locally abundant stitchwort, rare knapweed, locally frequent meadow buttercup, locally dominant common couch-grass, creeping thistle. Rank structure suitable for reptiles. Several mammal paths crossing. Trees mature/senescent oaks with high BRP.
15	Patch of tall ruderal dominated by creeping thistle with rare silver birch.
16	Hedge with trees. Abundant hawthorn, bramble, occasional field maple, blackthorn, oak.
17	Poor semi-improved grassland with scattered scrub. As per TN14 with abundant bramble and nettle.
18	Semi-natural broadleaved woodland dominated by beech. Shrub layer poor. Rare elder, hawthorn. Ground flora dominated by nettle.
19	Semi-natural broadleaved woodland with abundant oak and rare sweet chestnut, black poplar. Shrub layer holly, laurel, elder, ash all frequent to abundant. Ground flora dominated by nettle. Occasional cow parsley and male fern.
20	Poor semi-improved grassland. As per TN14. Rank structure suitable for reptiles.
21	Secondary semi-natural broadleaved woodland. Dominated by semi-mature oak.
22	Marshy grassland – species as per TN14 with abundant compact rush and soft rush.
23	Poor semi-improved grassland with scattered scrub species as per TN14, scrub occasional bramble and blackthorn.
24	Derelict cow sheds. BRP negligible.
25	Tall ruderal dominated by creeping thistle and nettle.
26	Evidence of badger.
27	Pond – potentially eutrophic. Water very turbid with no aquatic vegetation. Marginal species dominated by soft rush, and including rare reed mace, frequent doc sp., abundant nettle, northern 50% of the pond wooded (see TN 30). Badger dung pit on southern pond edge.
28	Badger signs.
29	Evidence of badger.
30	Semi-natural broadleaved woodland dominated by oak, occasional birch, aspen. Shrub

	layer dominated by hawthorn, occasional elder. Ground flora sparse but where present dominated by bryophytes.
31	Secondary woodland – as per TN21.

Site 21: Land South of Wickford

Target Note	Description
1	Poor semi-improved grassland. Dominated by cock's-foot and false oat-grass. Abundant creeping thistle. Occasional bristly ox-tongue, hogweed, cow parsley. Locally frequent nettle, rare black horehound, teasel, dock sp. Rank structure suitable for reptiles.
2	Amenity grassland playground.
3	Hedge dominated by bramble. Occasional hawthorn, field maple, rare rose.
4	Defunct hedge. Abundant hawthorn, buckthorn, rare spindle, dogwood.
5	East of hedge – poor semi-improved grassland as per TN1.
6	Thin band of semi-natural broadleaved woodland dominated by ash, occasional oak, field maple. Shrub layer dominated by hawthorn and blackthorn. With maple regeneration and abundant bramble. Ground flora sparse, dominated by grasses as per TN1 with occasional cow parsley.
7	Hedge. Dominated by hawthorn and blackthorn, frequent bramble. Verge to northern edge improved grassland dominated by perennial rye-grass. Dry ditch to north dominated by nettle.
8	Short but mature hedge dominated by blackthorn. One mature oak present with high BRP. 2m wide field margin around field edge comprising improved grassland with reptile potential.
9	Rank poor semi-improved grassland dominated by false oat-grass, occasional cow parsley, greater willowherb, spear thistle. Rare teasel, frequent bristly ox-tongue.
10	Hedge – mature with ditch (appears to be double-hedge). Dominated by blackthorn, occasional ash, field maple, elm.
11	Large rubble piles to east of area. Scrub dominated by hawthorn. Ground layer perennial rye-grass, cock's-foot, Yorkshire fog.
12	Broadleaved plantation woodland. Abundant elm, field maple (semi-mature). Shrub layer abundant blackthorn and rare spindle.
13	Semi-mature broadleaved plantation woodland. Ash, rowan, lime, oak, field maple, hawthorn, rose, dogwood, all frequent to abundant. Ground flora dominated by tall ruderal species – mostly fleabane.
14	Poor semi-improved grassland. Species as previously, with frequent smooth hawks-beard, meadow buttercup, frequent white clover.

15	Improved grassland paddock mown short. Hedge to west with species as previously, Leyland cypress hedge to north.
16	Defunct elm hedge.
17	Industrial units and hardstanding. Negligible BRP.
18	Improved grassland horse paddock. Highly poached. Dominated by perennial rye-grass, abundant meadow buttercup, frequent white clover.
19	Buildings and hardstanding. Scattered ruderal vegetation. Mature trees along the western boundary.
20	Semi-natural broadleaved woodland dominated by ash, field maple and oak. Shrub layer occasional blackthorn, ground flora dominated by ivy, frequent nettle, occasional cow parsley. Brook running through woodland. No channel vegetation.
21	Semi-improved neutral grassland. Dominated by cock's-foot, perennial rye-grass, abundant meadow buttercup, rare mouse-ear, occasional wild carrot, frequent red clover, occasional knapweed, rare bristly ox-tongue, ragwort, abundant creeping bent, occasional sweet vernal, rare teasel.
22	Rank grassland suitable for reptiles.
23	Wetter grassland with frequent tufted hair-grass.
24	No direct access. Dense scrub dominated by hawthorn with ground flora dominated by ivy.
25	Dense scrub dominated by hawthorn over poor semi-improved grassland. No access at time of survey.
26	Horse paddock. Heavily poached. Species as previously.
27	Outgrown hedge. Species as previously.
28	Rank poor semi-improved grassland species as per TN21. Suitable for reptiles.
29	Horse paddocks. Species as previously.
30	Semi-natural broadleaved woodland dominated by oak, occasional cherry, field maple, ash, lime. Shrub layer with frequent bramble, blackthorn, occasional elm. Ground flora dominated by cow parsley.
31	Dense scrub dominated by bramble, frequent nettle, occasional laurel, rare elm.
32	Hedge, species as previously.
33	Hedge, species as previously.
34	Hedge, species as previously.
35	Semi-natural broadleaved woodland (outside site boundary). Dominated by oak, abundant willow, occasional field maple. Ground flora dominated by ivy and nettle. Locally abundant Himalayan balsam.
36	Hedge, species as previously.

37	Hedge, species as previously.
38	Woodland, wet in character. Dominated by alder and willow with a river running through the centre. Locally dominant common reed.

Site 22: Land to the west of Lower Dunton Road (North)

Target Note	Description
1	Semi-improved grassland with scattered scrub dominated by perennial rye grass, bramble, frequent bristly ox-tongue, occasional fleabane and dandelion.
2	Dry ditch dominated by perennial rye grass, abundant great willowherb and frequent reed mace.
3	Hedge dominated by blackthorn, abundant hawthorn and frequent bramble.
4	Improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent red fescue, occasional creeping buttercup and bristly ox-tongue.
5	Mature oak with bat roost potential.
6	Ditch dominated by perennial rye grass, abundant great willowherb and occasional creeping thistle. Hedge dominated by blackthorn.
7	Scattered trees dominated by hawthorn, frequent field maple and rare oak.
8	Defunct hedge dominated by blackthorn and abundant hawthorn.
9	Improved grassland dominated by perennial rye grass, frequent creeping thistle, Yorkshire fog and creeping buttercup.
10	Hedge dominated by hawthorn, abundant bramble, frequent blackthorn, field maple, occasional dog rose and elder.
11	Tall ruderal dominated by common nettle and abundant creeping thistle.
12	Improved grassland with tall ruderal.
13	Improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent bristly ox-tongue, bramble and rare dog wood.
14	Hedge dominated by elm, abundant hawthorn, frequent blackthorn and field maple.
15	Hedge dominated by hawthorn, abundant elm, blackthorn and occasional poplar.
16	Scattered trees dominated by oak.
17	As per TN 16

18	As per TN 16
19	Defunct hedge with scattered trees. As per TN 8
20	Hedge dominated by elm and abundant hawthorn.
21	Improved grassland dominated by perennial rye grass, abundant Yorkshire fog, frequent creeping buttercup and occasional bristly ox-tongue.
22	Semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent dock, locally frequent fat hen, common daisy and occasional vetch *sp*.
23	Hedge dominated by elm, abundant bramble and occasional elder. Ditch dominated by reed mace and abundant creeping thistle.
24	Poor semi-improved grassland dominated by perennial rye grass, abundant Timothy, locally abundant fleabane, goose-foot, common nettle, frequent crested dog's-tail, occasional creeping buttercup, bristly ox-tongue and dock *sp*.
25	Hedge dominated by bramble, frequent ash and occasional blackthorn.
26	Heavily grazed poor semi-improved grassland dominated by perennial rye grass, abundant creeping buttercup, frequent dock and common daisy.
27	Rough poor semi-improved grassland dominated by perennial rye grass, abundant couch, Timothy, frequent dock *p*, creeping buttercup, occasional bristly ox-tongue and ragwort. Potential for reptiles.
28	Pond dominated by reed mace, abundant bramble, occasional birch and crack willow.
29	As per TN 27 with scattered trees dominated by oak, locally abundant vetch sp, great willowherb, frequent blackthorn, ash, birch bramble and hawthorn.
30	Semi-improved grassland with tall ruderal dominated by perennial rye grass, abundant dock, common nettle, frequent vetch, great willowherb, locally frequent red dead nettle, occasional white dead nettle and rare common mallow. Scattered scrub dominated by hawthorn.
31	Defunct hedge dominated by hawthorn and abundant field maple.
32	Row of trees dominated by conifers.
33	Dense scrub with scattered trees dominated by hawthorn, occasional oak, ash and field maple.
34	Ditch with water abundant with common nettle, frequent great willowherb, creeping thistle, and occasional hogweed and elder.
35	Wet ditch dominated by reed mace, abundant great willowherb and rare willow *sp*.
36	Hedge dominated by hawthorn and abundant elm.
37	Poor semi-improved grassland dominated by perennial rye grass, abundant bristly ox-tongue, white clover, greater plantain, frequent goosefoot and occasional vetch. Scattered scrub dominated by blackthorn.
38	As per TN 36

39	Improved grassland dominated perennial rye grass, abundant white clover, creeping buttercup, frequent common daisy and occasional creeping thistle.

Site 23: Land to the west of Lower Dunton Road

Target Note	Description
1	Improved grassland dominated by perennial rye grass, abundant white clover, locally frequent vetch, occasional creeping buttercup and rare bristly ox-tongue.
2	Dense scrub dominated by blackthorn, abundant bramble and rare creeping thistle.
3	Tall ruderal with dominated great willowherb, locally abundant blackthorn and occasional teasel.
4	Wet ditch adjacent to hedgerow. Species included dominant blackthorn, abundant hawthorn, occasional bramble and common nettle
5	Rough grassland dominated by perennial rye grass.
6	Pond with vegetation. Dominated by common reed with hawthorn around the edge.
7	Improved grassland dominated perennial rye grass.
8	Scrub dominated by bramble.
9	Scrub dominated by hawthorn, abundant bramble and occasional dog rose.
10	Dense scrub dominated by blackthorn, abundant bramble and frequent hawthorn.
11	Semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent creeping thistle and creep buttercup and ragwort, occasional dock, and rare broad-leaved willowherb. Scattered scrub included oak and blackthorn.
12	Dense scrub dominated by bramble, abundant silver leaved poplar, frequent blackthorn and occasional crack willow.
13	Dense scrub with tall ruderal. Dominated by blackthorn, abundant common nettle, locally abundant great willowherb, frequent crack willow, occasional oak, elder and hawthorn, and rare ash.
14	Dog kennels dominated by perennial rye grass, abundant white clover, frequent creeping buttercup and occasional dandelion and cock's-foot.
15	Private garden with scattered trees, including conifer, rhododendron, crack willow, ash and elder.
16	Dominated by perennial rye-grass.
17	Perennial rye-grass dominant. White clover abundant. Occasional meadow buttercup.

	Heavily grazed.
18	Evidence of ridge and furrow. Species as per TN17 with rare dandelion, common mouse-ear and self-heal.
19	As per TN16.
20	As per TN16.

Site 24 Land to the east of Lower Dunton Road

Target Note	Description
1	Semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog, frequent vetch, locally frequent red clover, occasional bristly ox-tongue, creeping buttercup and rare ragwort.
2	Hedgerow with dominant blackthorn, abundant hawthorn, frequent elm and occasional ash.
3	Field margin dominated by perennial rye grass, abundant cock's-foot and frequent couch-grass.
4	Hedgerow with dominant blackthorn, abundant hawthorn and frequent elm.
5	As per TN 4 with occasional dog rose and poplar.
6	Dense scrub dominated by bramble, abundant blackthorn, locally abundant common nettle, creeping thistle and rare elder.
7	Tall ruderal with scattered scrub dominated by common nettle, abundant creeping thistle, frequent bramble, field bindweed, locally frequent great willowherb, occasional ash, blackthorn, elder and bristly ox-tongue.
8	Hedgerow dominated by elm, abundant hawthorn, frequent bramble and occasional great willowherb.
9	Semi-improved grassland along the field margin dominated perennial rye grass, abundant Yorkshire fog, frequent vetch, bristly ox-tongue, occasional white clover and rare hard rush.
10	Hedgerow dominated by hawthorn, abundant bramble and rare sycamore.
11	Semi-improved grassland dominated by perennial rye grass, abundant ground ivy, locally abundant white dead nettle, frequent creeping thistle and common nettle.
12	Treeline dominated by conifer and abundant poplar.
13	Hedge with scattered trees dominated by blackthorn and occasional silver leaved poplar. Patches of tall ruderal dominated by great willowherb, abundant common nettle, occasional blackthorn and rare elder.

14	Hedge dominated by elm and occasional ash.
15	Hedgerow dominated by blackthorn, abundant hawthorn, frequent elm, occasional bramble and rare field maple.
16	Semi-improved grassland dominated by perennial rye grass, frequent vetch sp, locally frequent red fescue and rare tufted hair grass.
17	Dense scrub dominated by hawthorn, abundant bramble, blackthorn, frequent field maple, occasional oak, lime and rare crab apple. Ground flora comprised of abundant ivy, perennial rye grass, frequent white clover and occasional red clover.
18	Dense scrub dominated by hawthorn and abundant elm.
19	Hedgerow dominated by hawthorn, frequent field maple and bramble.
20	Dense scrub dominated by bramble.
21	Poor semi-improved grassland dominated by perennial rye grass, frequent Timothy, occasional crested dog's-tail and occasional creeping buttercup.
22	Small area of tall ruderal dominated by common nettle.
23	Hedgerow dominated by blackthorn and frequent hawthorn.
24	Field margin dominated by cleaver, frequent dead nettle and occasional herb-Robert.
25	Poor semi-improved grassland dominated by perennial rye grass, abundant yarrow, frequent common nettle and bramble. Large areas of bare ground.
26	Hedgerow dominated by conifer.
27	Poor semi-improved grassland dominated perennial rye grass, abundant Timothy, frequent bent-grass, crested dog's-tail and occasional creeping buttercup.
28	Patch of dense scrub dominated by bramble and occasional hawthorn.
29	Hedge dominated by hawthorn.
30	As per TN 27 with rare oak.
31	Poor semi-improved grassland dominated by perennial rye grass, abundant crested dog's-tail, frequent creeping buttercup, cock's-foot and occasional wall barley.
32	Hedgerow dominated by conifer
33	Hedgerow dominated by cotoneaster. Treeline adjacent to hedgerow dominated by sycamore.
34	Hedgerow dominated by blackthorn, occasional bramble and dog rose.
35	As per TN 34.
36	As per TN 32.
37	Poor semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog and occasional Timothy.

38	Hedgerow dominated by hawthorn, frequent blackthorn, occasional bramble and dog rose.
39	As per TN 38.

Site 25: Land at Tompkins Farm

Target Note	Description
1	Access track – improved grassland bordered by hedges on eastern side and scrub on western side. Dominated by perennial rye-grass. Scrub dominated by bramble, occasional common reed, rare hawthorn, frequent nettle. Hedge dominated by elm, occasional hawthorn, abundant blackthorn, occasional trees including ash, sorbus sp.
2	Semi-improved neutral grassland – horse grazed paddock. Dominated by perennial rye-grass, abundant cock's-foot, frequent bristly ox-tongue, occasional buttercup, dandelion, locally abundant red clover, rare white clover, doves-foot cranesbill, knapweed, cow parsley, meadow cranesbill, occasional crested dog's-tail, timothy, abundant meadow-grass sp., rare wild carrot.
3	Semi-natural broadleaved woodland dominated by oak, shrub layer dominated by blackthorn, frequent hawthorn, bramble and rose. Ground flora sparse, where present dominated by ivy.
4	Owl box on mature oak tree.
5	Hedge with scattered trees. Dominated by blackthorn, frequent hawthorn, occasional bramble, trees dominated by oak, rare field maple, ash.
6	Hedge with scattered trees. Species as per TN5.
7	Poor semi-improved grassland. Dominated by cock's-foot, abundant false oat-grass, creeping bent. Rare ragwort. Dense, thatch structure suitable for reptiles. Also on a south-facing bank. Scrub dominated by blackthorn and scattered semi-mature trees including oak and Lombardy poplar to north, adjacent to golf course.
8	Dense scrub with scattered trees. Dominated by blackthorn, hawthorn, abundant bramble, rare rose and buddleia. Trees frequent oak, occasional field maple, apple pear, ground flora dominated by ivy.
9	Semi-natural broadleaved woodland dominated by oak, occasional black poplar, ash. Shrub layer dominated by hawthorn and blackthorn, rare spindle,, field maple and rare yew. Ground flora dominated by ivy. Rare wood false brome, cow parsley, black bryony.
10	Semi-improved neutral grassland. Species similar to TN2.
11	Scrub patch.
12	Improved grassland access track.
13	Nursery. Hardstanding and greenhouses/sheds. Negligible BRP. Log pile to north of

	site.
14	Hedge with trees. Dominated by elm, occasional hawthorn, rose, rare privet, bramble, ash.
15	Farm access. Amenity grassland to either side of track. Elm hedge to east.
16	Homebase/ industrial estate. Hardstanding and buildings bordered by ornamental planting including red oak, field maple, cotoneaster.
17	Semi-natural broadleaved woodland dominated by ash, frequent elm, abundant oak regeneration.
18	Dense scrub dominated by bramble, occasional elm and oak regeneration.
19	Double-fenced area with long, thatch grass suitable for reptiles.
20	Semi-improved neutral grassland pony-grazed. Abundant crested dog's-tail, creeping bent, field barley, knapweed, occasional red clover, wild mignonette, rare rose, occasional Yorkshire fog, locally frequent yellow vetchling, rare wild carrot. Rare fleabane.
21	Grassland with shorter structure.
22	Badger dung pit on path.
23	As per TN20. Very short.
24	Dense scrub. Grades into woodland in the east. Scrub dominated by hawthorn, blackthorn, frequent elm, rare bramble and rose. Ground flora sparse. Woodland species include oak and field maple.
25	Abundant vetch sp., grass length longer than previously, suitable for reptiles. Abundant bristly ox-tongue, less knapweed here.
26	Ephemeral pond surrounded by crack willow, dry at time of survey.
27	Graveyard and church. Amenity grassland.
28	Church with pitched clay-tiled roof with some missing or raised tiles and missing ridge tiles. Belfry. BRP high.
29	Poor semi-improved grassland. Suitable for reptiles with rank structure. Dominated by common couch and cock's-foot, abundant timothy, locally abundant knot-grass, common orache, bristly ox-tongue, rare red clover, spear thistle, goat's-beard, abundant white clover.
30	Semi-natural broadleaved woodland dominated by oak, with rare cedar sp. Shrub layer dominated by hawthorn, occasional privet, elder, field maple, privet, bramble. Ground flora dominated by ivy, rare lily sp., male fern.
31	Semi-improved neutral grassland. Perennial rye-grass dominant, abundant white clover, frequent daisy, rare dandelion, frequent red bartsia, locally frequent smooth hawks-beard, occasional ribwort plantain, rare spurge.
32	Semi-improved neutral grassland supporting some unimproved indicator species. As per TN2 with abundant cock's-foot, meadow barley, bent-grass, red fescue, frequent red clover and spiny rest-harrow, occasional wild carrot, frequent knapweed, rare bristly ox-

	tongue.

Site 26: Land east of Noaks Bridge

Target Notes	Description
1	Semi-improved grassland dominated perennial rye grass, locally abundant vetch, frequent common nettle, dock p and bramble, locally frequent red deadnettle, occasional ox-eye and teasel.
2	Dense scrub dominated by blackthorn, abundant hawthorn, frequent ash and oak, occasional crack willow.
3	Semi-improved grassland dominated perennial rye grass, abundant cock's-foot, frequent red clover and ragwort and occasional creeping buttercup.
4	Hedgerow dominated by hawthorn, abundant elm and hawthorn, frequent bramble, occasional field maple and oak.
5	Dense scrub dominated by elm, abundant hawthorn and blackthorn, and frequent oak.
6	Dense scrub dominated by hawthorn, frequent bramble, occasional oak and ash.
7	Works yard with large areas of spoil.
8	Wet ditch dominated by common reed.
9	Hedgerow dominated by blackthorn, abundant bramble, occasional elder and ash.
10	Amenity grassland dominated by perennial rye grass, abundant cock's-foot, locally abundant yarrow, frequent bristly ox-tongue, occasional white clover and rare field speedwell.
11	Road margin with dominant perennial rye grass, abundant couch-grass and cock's-foot, locally abundant common nettle, frequent white clover locally frequent vetch sp, and occasional bristly ox-tongue and Timothy.
12	Amenity grassland dominated by perennial rye grass, abundant white clover, frequent ribwort plantain, common daisy and dandelion.
13	Wet ditch dominated common reed, abundant great willowherb, and locally frequent soft rush.
14	Semi-improved grassland with scattered scrub dominated by perennial rye grass, abundant moss, frequent oak and blackthorn, locally frequent common nettle, and occasional dog rose.
15	Grassland dominated by red fescue, abundant perennial rye grass, locally abundant white clover and frequent greater plantain.
16	Dense scrub dominated by bramble, abundant hawthorn and blackthorn, frequent ash,

	and occasional oak and elder.
17	Hedgerow dominated by hawthorn, frequent hawthorn and sycamore, and occasional hazel, elder and oak.
18	Amenity grassland dominated by perennial rye grass, locally abundant common daisy, cleaver, frequent ribwort plantain and occasional umbellifers, bristly ox-tongue and soft rush. Scattered trees dominated by alder, frequent birch, hawthorn and blackthorn, occasional conifer and laurel.
19	Ponds vegetated in some areas. Species included water lily and common reed.
20	Tall ruderal dominated by creeping thistle and abundant dock sp. Laurel hedge adjacent to tall ruderal vegetation.
21	Dried pond with abundant common reed.
22	Rough grassland with scattered scrub dominated by cock's-foot, abundant bramble,, frequent great willowherb, fleabane, oak regeneration, creeping thistle and ribwort plantain, occasional umbellifer, goose-foot and bristly ox-tongue. Disused greenhouse located in this area.
23	Semi-improved grassland dominated by bent-grass, and occasional red clover and vetch sp.
24	Small area of tall ruderal dominated by creeping thistle, occasional common nettle and teasel, and rare dog rose.
25	Semi-improved grassland dominated bent-grass, abundant yarrow and creeping buttercup, frequent common daisy and ribwort plantain.
26	Row of ash trees with dominant perennial rye grass, abundant cock's-foot, frequent goose-foot, occasional fleabane and rare wild carrot.
27	Hedgerow dominated by blackthorn, abundant bramble, frequent hawthorn, and occasional oak.
28	Semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog, frequent creeping buttercup and bristly ox-tongue, locally frequent red clover, white clover and Timothy, and occasional common ragwort.
29	As per TN 27
30	As per TN 28 with dominant bramble.
31	As per TN 27
32	Field margins dominated by crested dog's-tail.
33	More heavily grazed grass dominated by perennial rye grass, abundant Yorkshire fog and white clover, frequent moss and crested dog's tail, occasional creeping buttercup and creeping thistle.
34	As per TN 27
35	Rough grassland dominated by perennial rye grass, abundant bramble, locally abundant white clover, frequent dock sp and creeping thistle, occasional bristly ox-tongue, and occasional teasel.

36	Hedgerow dominated by bramble and abundant blackthorn.
37	Semi-improved grassland dominated by perennial rye grass, abundant creeping buttercup, frequent bristly ox-tongue, occasional ox-eye daisy and ribwort plantain.
38	Tall ruderal dominated by dock, abundant perennial rye grass and common nettle, frequent bramble. Pond was dry.
39	Bare ground with rubble and wood piles. Garage with negligible BRP.
40	Rank poor semi-improved grassland. Suitable for reptiles. Abundant red fescue and false oat-grass, meadow buttercup and ragwort. Dominated by cock's-foot and bent-grass. Red clover and broad everlasting pea locally frequent. Sorrel, ribwort plantain and vetch rare.
41	Area of scrub and scattered trees dominated by Lombardy poplar.
42	Dense bramble scrub. Pampass grass rare. Large bund with scrub vegetation suitable for reptiles.
43	Dense scrub with scattered trees to the north of a private garden. Garden containing two small dry ponds. Scrub of hawthorn, blackthorn and bramble. Trees including oak, willow, ash and ornamental species. Ground flora dominated by ivy. Garden dominated by amenity grassland with scattered trees.
44	Amenity grassland lawn with dense thatch suitable for reptiles.
45	Residential property surrounded by moat and with pond to west. No aquatic vegetation and bank vegetation including yellow flag and bramble scrub.
46	Kennels. Various buildings and hardstanding.
47	Paddock. No access at time of survey.

Site 27: Land east of Bowers Gifford

Target Note	Description
1	Poor semi-improved grassland dominated by perennial rye grass, abundant Yorkshire fog, creeping buttercup, frequent vetch and bristly ox-tongue.
2	Rough uncut poor semi-improved grassland dominated by perennial rye grass, abundant cock's-foot, frequent creeping thistle, occasional dock and ragwort.
3	Hedge with scattered trees dominated by blackthorn, abundant bramble, frequent oak and hawthorn. Mature oaks with bat roost potential.
4	Hedge dominated by hawthorn and rare ash.
5	Tree planting in poor semi-improved grassland dominated by dog wood and occasional crack willow.

6	Poor semi-improved grassland dominated by perennial rye grass, abundant white clover, frequent broad-leaved dock, creeping buttercup and rare common knapweed.
7	Hedge dominated by hawthorn, abundant elm, blackthorn and occasional field maple.
8	Mature oak with bat roost potential.
9	Dense scrub dominated by hawthorn, abundant bramble, common nettle, dock, frequent elder, oak and occasional apple. Potential presence of badger.
10	Poor semi-improved grassland with tall ruderal dominated by perennial rye grass and frequent teasel.
11	Hedge with scattered trees dominated by bramble, abundant elm and occasional willow *sp.*
12	Dried pond.
13	Hedge dominated by blackthorn, abundant hawthorn, locally abundant elm, frequent field maple and occasional oak.
14	Hedge dominated blackthorn, abundant hawthorn, frequent elm and bramble.
15	Hedge dominated by blackthorn and abundant hawthorn.
16	Poor semi-improved grassland dominated perennial rye grass, frequent brome sp, occasional spear thistle and bristly ox-tongue.
17	Hedge dominated by bramble, abundant blackthorn, hawthorn, occasional wild plum, dog rose and hedge bindweed.
18	Improved grassland dominated by perennial rye grass, white clover, frequent creeping buttercup, dock *sp* and dandelion.
19	Scattered scrub dominated by bramble and abundant hawthorn.
20	Tree line dominated by crack willow.
21	Poor semi-improved grassland with scattered scrub dominated perennial rye grass, abundant blackthorn, creeping thistle, locally abundant Michaelmas daisy, frequent oak, cypress *sp*, common nettle, locally frequent ash, occasional elm, wild privet and rare horse chestnut.
22	Improved grassland grazed by cows dominated perennial rye grass, frequent creeping buttercup and rare spear thistle.
23	Poor semi-improved grassland with tall ruderal dominated perennial rye grass, abundant goose-foot and frequent bristly ox-tongue.
24	Pond dominated common reed, abundant common nettle, frequent reed mace, locally frequent goose-foot, occasional willow, soft rush, rare common mallow and elder.
25	Hedge dominated by elm, frequent field maple, occasional blackthorn, bramble and rare dog rose.
26	Hedge dominated by bramble, abundant hawthorn, frequent oak, elm and blackthorn.

27	Hedge dominated by rhododendron, abundant blackthorn and frequent bramble.
28	Treeline dominated by oak.
29	Hedge dominated by hawthorn, abundant blackthorn, occasional elder and field maple.
30	Rough poor semi-improved grassland dominated perennial rye grass, abundant false-oat grass and frequent couch. Tall ruderal dominated bristly ox-tongue, abundant creeping thistle, perennial rye grass, frequent dock *sp*, white clover, couch, occasional fat hen and rare teasel.
31	Semi-improved grassland with tall ruderal dominated bent-grass, abundant creeping thistle, red fescue, occasional white clover, bristly ox-tongue and goosefoot *sp*.
32	Hedge dominated by blackthorn, abundant spindle, hawthorn, frequent dog wood, occasional guelder-rose and willow.
33	Tall ruderal dominated by fat hen, abundant bristly ox-tongue, frequent common mallow and goose-foot
34	Improved grassland dominated perennial rye grass, abundant red fescue, locally abundant white clover, ragwort, locally frequent red clover and occasional shepherd's purse.
35	No access – work site of Balfour Beatty.

Site 28: Land east of South Green

Target Note	Description
1	Rough improved grassland with mown pathways and scattered scrub dominated perennial rye grass, abundant creeping bent, frequent Yorkshire fog, occasional selfheal, red clover.
2	Poor semi-improved grassland dominated creeping buttercup, abundant perennial rye grass, hawkbit and frequent creeping bent.
3	Rough Semi-improved grassland dominated perennial rye grass, abundant crested dog's-tail, frequent creeping bent, ribwort plantain, occasional hawkbit occasional dock and rare common knapweed.
4	Hedge dominated by bramble, occasional crack willow and dog rose.
5	Drainage ditch with running water. Dense scrub on either side. Water vole potential.
6	Semi-improved grassland and tall ruderal. Grassland dominated by perennial rye grass, abundant ribwort plantain and broad-leaved dock. Tall ruderal dominated by creeping thistle, locally abundant great willowherb and locally frequent common nettle.
7	Rough semi-improved grassland dominated perennial rye grass, abundant creeping buttercup, frequent cock's-foot and curled dock.

8	Defunct hedge dominated blackthorn, abundant bramble and frequent hawthorn.
9	Semi-natural broadleaved woodland dominated by oak and frequent sycamore. Shrub layer dominated by hawthorn and abundant elder. Ground flora dominated by ivy, occasional common nettle and frequent herb Robert.
10	Semi-improved grassland with scattered scrub dominated perennial rye grass, abundant cock's-foot and frequent ribwort plantain. Scrub dominated by hawthorn.
11	Dense scrub with scattered trees dominated by bramble, abundant ash, blackthorn and occasional crack willow.
12	Poor semi-improved grassland with scattered scrub.
13	Improved grassland dominated perennial rye grass, abundant creeping buttercup. Grazed by horses.
14	Hedge dominated by hawthorn, abundant bramble and occasional oak.
15	Improved grassland grazed by horses. Dominated by perennial rye grass, abundant creeping buttercup, frequent common daisy and locally frequent dock *sp*.
16	Hedge dominated by bramble.
17	Hedge dominated by conifer.
18	Treeline dominated by conifer.
19	Hedge dominated by bramble and abundant hawthorn.
20	Defunct hedge dominated by blackthorn, abundant bramble, frequent hawthorn, occasional oak and crack willow.

Site 29: Land West of Billericay, South of London Road and North of Blunts Wall Road

Target Note	Description
1	Rank grassland slightly wet suitable for reptiles
2	Marshy grassland. Dominated by red fescue. Abundant creeping bent. Occasional Yorkshire fog. Frequent black knapweed. Frequent common couch. Locally abundant tufted hair grass. Occasional yarrow. Occasional meadow buttercup. Abundant compact rush. Rare soft rush. Frequent to abundant hairy sedge. Rare birds foot trefoil. Occasional sorrel. Frequent cock's-foot. Rare greater willowherb. Rare bristly ox-tongue. Rare ragwort. Rare bramble.
3	Several large ant hills.
4	Plantation woodland. Dominated by oak. Abundant cherry. Abundant cypress sp. shrub dominated by bramble. Rare hawthorn.

5	Treeline. Leyland cypress
6	Hollow - potential ephemeral pond. Surrounded by scrub veg. Dominated by bramble. Occasional blackthorn. Occasional hawthorn. Rare willow sp. Occasional common nettle. Abundant soft rush. Rare hairy sedge. Rare pendulous sedge.
7	Outgrown hedge with trees. Abundant hawthorn, bramble, Leyland cypress. Trees occasional bird cherry, oak. Rare silver birch.
8	Dense scrub with scattered trees. Dominated by bramble. Frequent hawthorn and blackthorn. Trees occasional oak. Rare Lombardy poplar. Trees mature.
9	Stables. Brick construction. Pitched tiled roof. Tiles and fascia tight fitting. Some gaps under hanging tiles on gable ends. Brp high
10	Treeline. Rowan, scots pine, red maple, silver birch, ash, all Rare.
11	Many paths crossing field. Potentially badger.
12	Tall ruderal. Abundant nettle, ragwort, hedge mustard, red dead nettle, wood false brome, bramble. Creeping tormentil locally dominant.
13	No access for survey.
14	Tennis club. No access
15	Poor semi-improved grassland and tall ruderal with scattered trees. Rank structure suitable for reptiles. Abundant creeping thistle. Abundant to locally dominant greater willowherb. Dominated by false oat grass. Occasional nettle. Trees dominated by young oak. Abundant red fescue. Rare sorrel. Locally frequent bristly ox-tongue. Vetch sp rare.
16	Semi-natural broadleaved woodland. Ground flora dominated by ivy, occasional cow parsley. Shrub layer dominated by hawthorn. Rare rose. Canopy dominated by oak and sycamore.
17	Running water. Eutrophic? No channel vegetation. Banks dominated by ivy. Water grey colour.
18	Dense scrub with scattered trees. Abundant hawthorn, blackthorn, bramble. Trees rare oak.
19	Potential badger dung pit.
20	No access. Dense scrub and scattered trees. Dominated by bramble. Abundant blackthorn. Trees including ash and cherry.
21	Hardstanding tennis court.
22	Stream. No aquatic vegetation. Bank vegetation dominated by nettle and cow parsley.
23	Poor semi-improved grassland. Cut once to twice per year (pers comm – site manager).cock's-foot dominant, locally frequent false oat-grass and meadow buttercup.
24	Plantation woodland – dominated by young poplar and silver birch. Shrub layer and ground flora both absent.
25	Tall ruderal dominated by creeping thistle. Also present grasses as per TN23.

26	Amenity grassland lawn. Dominated by red fescue with abundant bent-grass and perennial rye-grass and abundant meadow buttercup. Bryophytes also abundant.
27	Old swimming pool back-filled and seeded with lawn species as per TN26.
28	As per TN23 with abundant perennial rye-grass and frequent ribwort plantain and yarrow.
29	As per TN28 with occasional tufted hair-grass, docks, broad-leaved willowherb and knapweed rare. Long thatch suitable for reptiles.
30	Young oak, hawthorn, bramble to southern edge.
31	No access – surveyed from boundary.

Appendix 2: Species Mentioned in the Text

Species List

Adder *Vipera berus*
Agrimony *Agrimonia eupatoria*
Annual meadow grass *Poa annua*
Apple *Malus sp*
Ash *Fraxinus excelsior*
Aspen *Populus tremula*
Australian swamp stonecrop *Crassula helmsii*
Beech *Fagus sylvatica*
Bent-grass *Agrostis* sp
Birch *Betula sp*
Bird cherry *Prunus padus*
Black bryony *Tamus communis*
Black horehound *Ballota nigra*
Blackthorn *Prunus spinosa*
Blue tit *Cyanistes caeruleus*
Bracken *Pteridium aquilinum*
Bramble *Rubus fruticosus* agg.
Bristly ox-tongue *Picris echioides*
Broad-leaved pondweed *Potamogeton natans*
Brome *Bromus* sp
Brooklime *Veronica beccabunga*
Broom *Cytisus scoparius* ssp *scoparious*
Brown long-eared *Plecotus auritus*
Bulrush *Schoenoplectus sp*
Butterfly-bush *Buddleja davidii*
Burdock *Arctium* sp
Cherry *Prunus sp*
Cleavers *Galium aparine*
Common couch *Elytrigia repens*
Common daisy *Bellis perennis*
Common figwort *Scrophularia nodosa*
Cock's-foot *Dactylis glomerata*
Common fleabane *Pulicaria dysenterica*
Common lizard *Zootoca vivipara*
Common mallow *Malva sylvestris*
Common mouse-ear *Cerastium fontanum*
Common nettle *Urtica dioica*
Common pipistrelle *Pipistrellus pipistrellus*
Common ragwort *Senecio jacobaea*
Common reed *Phragmites australis*
Compact rush *Juncus conglomeratus*
Cotoneaster *Cotoneaster sp*
Cow parsley *Anthriscus sylvestris*
Couch grass *Elymus repens*
Crack willow *Salix fragilis*
Creeping bent *Agrostis stolonifera*
Creeping buttercup *Ranunculus repens*
Creeping cinquefoil *Potentilla reptans*
Creeping thistle *Cirsium arvense*
Crested dog's-tail *Cynosurus cristatus*
Curled pondweed *Potamogeton crispus*
Dandelion *Taraxacum* agg.
Dock *Rumex sp*
Dog rose *Rosa canina*
Dogwood *Cornus sanguinea*
Dove's-foot crane's-bill *Geranium molle*
Dunnock *Prunella modularis*
Elder *Sambucus nigra*
Elm *Ulmus sp.*
Eurasian badger *Meles meles*
False fox sedge *Carex otrubae*
False oat-grass *Arrhenatherum elatius*
Fat hen *Chenopodium album*
Field bindweed *Convovulus arvensis*
Field maple *Acer campestre*
Field speedwell *Veronica persica*
Fieldfare *Turdus pilaris*
Fools watercress *Apium nodiflorum*
Foxglove *Digitalis purpurea*
Goat's-rue *Galega officinalis*
Goldfinch *Carduelis carduelis*
Goosefoot *Chenopodium sp*
Gorse *Ulex europaeus*
Grass snake *Natrix natrix*

Great crested newt *Triturus cristatus*

Great spotted woodpecker *Dendrocopos major*

Great tit *Parus major*

Great willowherb *Epilobium hirsutum*

Greater plantain *Plantago major*

Green woodpecker *Picus viridis*

Guelder-rose *Viburnum opulus*

Hard rush *Juncus inflexus*

Hawkbit *Leontodon sp*

Hawthorn *Crataegus monogyna*

Hazel *Corylus avellana*

Hedge bindweed *Calystegia sepium*

Herb-robert *Geranium robertianum*

Hogweed *Heracleum sphondylium*

Holly *Ilex aquifolium*

Hornbeam *Carpinus betulus*

Horse chestnut *Aesculus indica*

Horsetail *Equisetum sp*

House martin *Delichon urbicum*

Italian rye grass *Lolium multiflorum*

Ivy *Hedera helix*

Knapweed *Centaurea nigra*

Laurel *Prunus sp*Lombardy poplar *Populus nigra* 'Italica'

Leyland cypress Cupressus × leylandii

Lily *Lillium sp*

Lime *Tilia x europaea* sp.

Linnet *Carduelis cannabina*

Lords-and-ladies *Arum maculatum*

Male fern *Dryopteris filix-mas*

Meadow barley *Hordeum secalinum*

Meadow buttercup *Ranunculus acris*

Meadow cranesbill *Geranium pratense*

Moss *Bryophyte*

Noctule bat *Nyctalus noctula*

Oak *Quercus robur*

Ox-eye daisy *Leucanthemum vulgare*

Pear (common) *Pyrus communis*

Pendulous sedge *Carex pendula*

Perennial rye grass *Lolium perenne*

Pied wagtail *Motacilla alba*

Poplar *Populus sp*

Privet *Ligustrum sp*

Red bartsia *Odontites vernus*

Red campion *Silene dioica*

Red clover *Trifolium pratense*

Red dead nettle *Lamium purpureum*

Red fescue *Festuca rubra*

Redshank *Persicaria maculosa*

Redwing *Turdus iliacus*

Reed bunting *Emberiza schoeniclus*

Rhododendron *Rhododendron ponticum*

Ribwort plantain *Plantago lanceolata*

Robin *Erithacus rubecula*

Rose *Rosa sp*

Rowan *Sorbus aucuparia*

Selfheal *Prunella vulgaris*

Shepherd's-purse *Capsella bursa-pastoris*

Silver birch *Betula pendula*

Slow worm *Anguis fragilis*

Soft rush *Juncus effusus*

Smaller cat's-tail *Phleum bertolonii*

Smooth hawksbeard *Crepis capillaris*

Smooth newt *Lissotriton vulgaris*

Snowberry *Symphoricarpos albus*

Sorrel *Rumex acetosa*

Spear thistle *Cirsium vulgare*

Spindle *Euonymus europaeus*

Spiny restharrow *Ononis spinosa*

Spurge *Euphorbia sp*

Stitchwort *Stellaria sp*

St John's-wort *Hypercium sp*

Swallow *Hirundinidae*

Sweet chestnut *Castanea sativa*

Sweet vernal-grass *Anthoxanthum odoratum*

Sycamore *Acer pseudoplatanus*

Tare *Vicia sp*

Teasel *Dipsacus fullonum*

Timothy *Phleum pratense*

Traveller's-joy *clematis vitalba*

Tufted hair-grass *Deschampsia cespitosa*

Vetch *Vicia* sp

Vetchling *Lathyrus* sp

Wall barley *Hordeum murinum*

Water mint *Mentha aquatica*

Waxwing *Bombycilla*

Wild carrot *Daucus carota*

Wild privet *Ligustrum ovalifolium*

White clover *Trifolium repens*

White dead-nettle *Lamium album*

Wild mignonette *Reseda lutea*

Willow *Salix sp*

Wood false brome *Brachypodium sylvaticum*

Wren *Troglodytes troglodytes*

Yarrow *Achillea millefolium*

Yellow flag iris *Iris pseudacorus*

Yellow vetchling *Lathyrus aphaca*

Yellow wagtail *Motacilla flava*

Yew *Taxus baccata*

Yorkshire fog *Holcus lanatus*