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Basildon Borough Council Ecology Surveys

Additional Sites 2016

Prepared by LUC
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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:
London
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

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2.0	16/12/2016	Issue 2 (following client comments)	Rory Glackin	Peter Lawrence	Peter Lawrence

Contents

Figures

1 Introduction

1.1 In 2015, LUC undertook ecological surveys of 29 potential strategic sites for Basildon Borough Council (BBC), to inform development the Draft Local Plan. The aim of the surveys was to identify preferred sites for development. These surveys are reported in the report: Basildon Borough Ecology Surveys (LUC, 2015).

1.2 Following completion of the surveys and assessment, the Draft Local Plan was subject to consultation from January to March 2016. This consultation gave rise to additional sites being promoted to the Council as potential strategic sites for development purposes.

1.3 In August 2016, LUC was commissioned to undertake ecological surveys of an additional seven Sites arising from the consultation process, taking the same approach adopted for the previous surveys. This report details the results and assessments for these additional sites (numbered from 30 – 36 for continuity, and from here on referred to as the 'Sites').

2 Method

2.1 The ecological assessments were carried out at a 'high level' without consideration of any pre-existing design proposals that may exist for some sites in order to ensure consistency of approach for all potential strategic 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

2.2 Biological records were reviewed to inform the assessments of each of the additional Sites.

2.3 Data regarding designated sites and habitats was provided by the Council in December 2015, and obtained from publically available sources. 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, along with datasets reviewed including those with 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.

2.4 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

2.5 Phase 1 Habitat Surveys for each Site were undertaken in October and November 2016. Surveys were undertaken in accordance with current best practice guidance[1], and included the rapid classification of all habitats within the Study Area boundary, and the identification of dominant or characteristic flora and/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**.

2.6 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 or local BAP priority species); this included an assessment of habitat suitability. Current best practice methods for each species 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).

Evaluation and Recommendations

2.7 For each Site, the ecological features and/or receptors (designated sites, habitats and/or species), were valued as far as possible given the extent of surveys. This included consideration of the condition of the feature, and its suitability for protected and notable species, including assessment of the quality of it where relevant. Where protected and notable species records exist within the

[1] Joint Nature Conservation Committee (1990). Handbook for Phase 1 Habitat Survey. JNCC, Peterborough.

Site, each record may represent more than one individual (i.e a badger sett or several individuals). The approach to this valuation was based on professional judgement, formed through experience and standard approaches, such as those produced by the Chartered Institute of Ecology and Environmental Management and the British Standards Institute. 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.

2.8 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 / detailed design, and was informed by professional judgement to provide an indication of likely impacts and the potential significance of these. This identified potential requirements for avoidance measures or mitigation which may be required to enable development to proceed in accordance with planning policy and nature conservation legislation.

2.9 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

2.10 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, which may increase or decrease suitability for faunal species. This will also affect the potential to identify plant species. 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 undertake very detailed surveys (such as National Vegetation Classification surveys) to identify certain plant species. 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. The additional 2016 surveys were undertaken in October-November which reduced the potential for plant species ID, with management of grassland areas also hindering identification. However, this was taken in to consideration during the assessments, and is not considered a particularly significant constraint to the study, given the high level nature of the surveys required to inform policy development, and that more detailed surveys would be required at a later stage if Sites are taken forward for planning applications.

2.11 Wherever possible the entire Site was accessed for survey. However, this was not always possible given issues such as the presence of fencing, livestock, locked access or land over filled with refuse. 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 a precautionary approach was adopted to ensure that potential issues were considered.

3 Findings and Assessment

3.1 The following sections provide an assessment for each Site, within a table format which can be used as a stand-alone document, in line with the assessments undertaken previously for Sites 1-29.

3.2 Each Site assessment comprises an overall description of the Site, baseline data including biological records for habitats and species, a description of the habitats present on the Site and suitability for protected species. Following this, an appraisal of the ecological data and recommendations and/or mitigation in the event that development is to take place within the Site is detailed.

3.3 Phase 1 habitat maps are provided in each section below the assessment form, and associated target notes in **Appendix 1**.

3.4 An overview map illustrating the location of the new strategic Sites in context with the previous Sites can be found in **Figure 3.1** below.

Basildon Borough Council
Ecology Surveys
Additional Sites

Figure 3.1: Overview map

- Basildon district boundary
- New Strategic Sites
- Existing Strategic Sites

Map Scale @ A3: 1:45,000

LUC

Source: Basildon Bourogh Council

CB:VT EB:Tzampoura_V LUCEDI 6949_Fig3-1_OverviewMap_A3L 19/12/2016

4 Site 30 – Land South of Outwood Common Road (Brooklands Farm)

Survey Site	30	Location	Billericay

Site Overview

The Site is located south east of Billericay town, just east of Southend Road. The Site lies south of Sunnymede and east of South Green and Great Burstead residential areas, situated within an arable landscape.

A small patch of woodland lies adjacent to the Site to the north west, and a pond lies to the north east of the Site adjacent to the hedgerow on the eastern boundary.

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, 500m north west;
- 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 west.

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

- Parsonage Farm Green - ancient farm lane supporting species rich hedgerows with diverse ground flora, 400m east.

Species records

Two common pipistrelle *Pipistrellus pipistrellus* bat records were identified within the Site boundary.

Habitat Description (see Figure 4.1)

Arable

The site was almost entirely comprised of an arable field. The crop in the field had recently been harvested at the time of the survey. A treeline of extended in to the centre of the field, from the north of the Site.

Hedges and Treelines

Hedges with trees bordered the entire site, adjacent to dry (at the time of survey) ditches. The hedges were dominated by hawthorn *Crataegus monogyna* and dog rose *Rosa canina* with abundant poplar *Populus sp*., blackthorn *Prunus spinosa* and bramble *Rubus fruticosus agg*. Occasional oak *Quercus sp.*, field maple *Acer campestre*, ash *Fraxinus excelsior* and willow *Salix sp.* trees were recorded within the hedges, with silver birch *Betula pendula* and cherry *Prunus avium* noted rarely, mostly along the southern Site boundaries. It is therefore likely that some if not all of the hedges may qualify as species-rich hedges in accordance with the

Hedgerow Regulations.

Four semi-mature oak trees formed a treeline, likely a former hedgerow, extending in to the centre of the field.

Field margin

A margin of species-poor grassland lies between the arable land and hedgerow. Due to the time of year, grass and flower species were not identified. The margin was too narrow to map in **Figure 4.1**.

Fauna

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

Badger – The Site presents suitable habitat for badgers to forage and establish setts, particularly along the hedges and adjacent ditches (just outside of the boundary). Similarly opportunities are provided in the wider landscape, including the adjacent woodland to the north west.

Bats – The majority of the shrubs and trees within the hedgerow are of an age and size unlikely to support bat roosts. However occasional mature and semi-mature trees within the hedges may provide roosting opportunities. Furthermore, the hedges, treeline, ditch and grassy field margins have potential to support foraging and commuting bats, with good connectivity to other suitable habitats in the wider landscape.

Great crested newt - The ditch adjacent to the Site boundary was dry at the time of the survey, and is therefore highly unlikely to support breeding GCN. One pond was identified adjacent to the Site, with at least three more within the wider vicinity which may be suitable to support breeding GCN. Although the Site itself does not provide breeding habitat for GCN, the field boundaries (hedges and grassy filed margin) have potential to provide suitable foraging, shelter and hibernation habitat for GCN if present in the vicinity.

Reptiles – The grassy field margins provides suitable foraging habitat for common and widespread reptile species (such as slow worm, common lizard and grass snake), whilst the hedges bordering the Site provide potential habitat for reptiles to shelter and hibernate.

Dormouse – Due to the presence of likely species rich hedges bordering the Site, with good connectivity to woodland within the wider landscape, there is potential for dormice to be present.

Birds – Hedge habitat and trees within the Site provide suitable opportunities for nesting birds, whilst the arable fields may support ground nesting birds. This may include species of principle importance and local BAP priorities such as song thrush and other farmland birds, such as skylark.

No invasive species 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. Although no national or local Sites lie within the Site itself. Mill Meadow LNR and Mill Meadows SSSI lie 500m north west of the Site. This is of a distance that it is unlikely development would directly impact upon these sensitive Sites. Parsonage Farm Green lies 400m east, also of a distance unlikely to be directly impacted by works.
Habitats	The majority of the Site comprises arable land of relatively low ecological value. The field boundaries (comprising hedges, trees, grassy field margin and ditches) providing the highest value habitat within the Site. Both hedges and arable field margins are listed as Priortiy Habitats in the Essex Biodiversity Action Plan. Hedges may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, with hedges identified on site potentially species-rich. Habitat loss or ground disturbance may impact on hedges/trees and associated wildlife. Hedges 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 the hedges with trees and associated field margin likely to be of highest value to a wide range of species. Development within the Site could 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 hibernation 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: • Badgers, particularly the presence of setts associated with field boundaries; • Bats roosting within trees and utilising the hedges for forgaing and commuting; • GCN particularly associated with the hedgerow and field margin habitats, if breeding within the ponds in the wider vicinity; • Reptiles within grassy field margin and hedge habitats; • Dormice within the hedge habitat; • Nesting birds could also be affected by any removal of hedges, trees and 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 identified as necessary, and based on proposals to ensure that potential impacts and any appropriate mitigation is developed accordingly. In particular, species surveys may be required for badger, bats, GCN, reptiles, dormice and birds.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain the hedge habitat, being the highest value habitat on Site, and providing an important connective role on a landscape scale. The arable land provides little opportunities for wildlife, with the exception of farmland bird species.

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 (all to be in accordance with relevant best practice guidance):

- Timing of works to avoid impacts on nesting birds, and potentially other species (dependent on the works);
- Habitat manipulation to deter animals such as GCN, reptiles, dormice and badger from the area of works and to potentially avoid impacts;
- If bat roosts are found, where possible they should be retained. If they cannot be retained, an NE licence would be required, with suitable mitigation measures including provision of replacement roosts and timing of works;
- Measures to prevent harm to GCN, reptiles and dormice, may involve sensitive methods and/or 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). This would require a NE licence for GCN and dormice;
- Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts, best practice construction measures and possible sett closure, potentially under NE licence;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats;
- Enhancement of habitats / habitat creation within the Site, including areas outside of the

development footprint, to compensate for any habitat loss;

Enhancement opportunities may include:

- Green infrastructure incorporated into development design to provide opportunities for wildlife, such as green walls or roofs;
- Planting of wildlife-friendly species, such as pollinator friendly and/ or native species;
- Incorporation of nesting and/or roosting opportunities for birds and bats.

Any mitigation or enhancement options would require a management plan to ensure viability of the methods and techniques. This may involve long term habitat management, detailed in a Landscape and Habitat Management Plan (LHMP). This should also include remidial measures should monitoring record divergence.

Overall Conclusion

Overall, the majority of the site is considered to be of low ecological value, with the field boundaries (comprising hedges, trees, and grassy margins), of greatest value given the habitat they 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 hedges;
- Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

Basildon Borough Council
Ecology Surveys
Additional Sites

Figure 4.1: Phase 1 Habitat Survey - Site 30

- Site boundary
- Target note
- Hedge with trees (native species-rich)
- Line of trees
- Field margin
- Arable

*Full hedgerow survey not possible given the scale of the survey

Map Scale @ A3: 1:5,500

LUC

0 250 500 m

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CB:VT EB:Tzampoura_V LUCEDI 6949_Fig4-1_Phase1Site30_A3L 07/12/2016

Source: LUC

5 Site 31 – Land East of Southend Road (Foot Farm)

Survey Site	31	Location	Billericay

Site Overview

The Site is located south east of Billericay town, directly east of South Green and Great Burstead residential areas, with Southend Road forming the western boundary. An area of woodland was located adjacent to the north of the Site, with arable fields to the east and 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 Sites of national importance located within 1km of the Site.

The following Local Wildlife Site is located within 1km of the Site:

- Parsonage Farm Green - ancient farm lane supporting species rich hedgerows with diverse ground flora, 540m north east.

Species records

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

Habitat Description

Poor Semi-improved Grassland

Poor semi-improved grassland was recorded across a large part of the Site, in the western and northern fields. This mostly comprised perennial rye-grass *Lolium perenne,* cock's-foot *Dactylis glomerata,* occasional dandelion *Taraxacum sp.* and ragwort *Jacobaea vulgaris*. Locally abundant creeping thistle *Cirsium arvense* was recorded in areas.

Hedges and Treelines

Hedges were noted along the majority of the field boundaries. Hedges varied across the Site including native species rich hedges with trees (including species such as hawthorn, bramble, poplar, dog rose, young oak, ash and hazel), to species-poor defunct hedges dominated by bramble. As well as shrubs, a line of mature trees ran along the ditch on the eastern boundary, mature trees comprising ash and willow.

Arable

Most of the southern half of the site comprised arable land, of an unknown crop recently harvested.

Scrub (scattered) / Tall Herb and Ruderal Communities

A patch of tall herb and scrub was noted in the northern half of the site, to the east of the hedgerow. This was dominated by bramble and nettle, with occasional ash closer to hedge line.

Other habitats

Other habitats recorded within the Site included dry ditches on the western, eastern and southern boundaries. A wet ditch with running water bordered the north eastern part of the Site, which was lined with shrubs and trees.

Fauna

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

Badger – The hedge (particularly adjacent to woodland area to the north of the Site) and ditch habitat on Site provided suitable sett building opportunities, whilst grassland and arable habitats presented suitable foraging habitat for badger.

Bats – The hedges and treelines, particularly where ditches are present, provided suitable foraging and commuting habitat for bats. In addition, some of the mature trees, particularly those adjacent to, or forming part of, the woodland to the north of the Site, have potential to support features for bats to roost.

GCN – No ponds were present within the Site itself, whilst ditches within the Site were found to be dry or flowing at the time of the survey and are therefore unlikely to support breeding GCN (which do not use running water for breeding). One pond was identified within 250m to the north east. This pond was connected to the Site via the hedge and ditch network. Although the Site itself does not provide breeding habitat for GCN, the field boundaries and grassland and scattered scrub/tall ruderal habitats have potential to provide suitable foraging, shelter and hibernation habitat for GCN if present in the wider vicinity.

Reptiles – The grassland and scattered scrub/tall ruderal hedge and ditch habitats on Site provide suitable opportunities for common and widespread reptile species (such as slow worm, common lizard and grass snake) to forage and shelter, although the grassland had low potential due to its short length and low structural diversity. The hedges bordering the Site provide potential habitat for reptiles to shelter and hibernate.

Dormice – Although hedge habitats were present within the Site, these are considered sub-optimal for dormouse due to their relatively low structural and species diversity (overall) and poor connectivity to suitable woodland habitat in the wider area.

Nesting birds – Hedge habitat and trees within the Site provide suitable opportunities for birds to nest, whilst the arable fields may support ground nesting birds. This may include species of principle importance and local BAP priorities such as song thrush and farmland birds such as skylark.

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. No national or locally designated Sites are located within the vicinty of the Site, with the exception of Paronage Green Farm, which given the distance and presence of intervening habitats is unlikely to be directly impacted by works.
Habitats	Habitats wihin the Site are generally widesperad and common, in particular grassland, arable and tall herb habitats. The habitats of greatest value on the Site comprised the hedge network, trees and ditches. Hedges are listed as Priority Habitats in the Essex Biodiversity Action Plan. Hedges may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, with some hedges identified on site potentially species-rich. Habitat loss or ground disturbance may impact on hedges/trees and associated wildlife. Hedges and trees 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 the hedge, ditch and trees providing the greatest opportunities for species, and the grassland having potential for reptiles and GCN. Arable and grassland habitats may also support ground nesting birds. Development within the Site could 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 hibernation 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: • Badger setts within hedge and ditch habitat, particularly in the north of the Site, and foraging within grassland and arable habitat; • Bats using mature trees for roosting, and hedges and treelines for foraging and commuting; • GCN and reptiles within grassland, tall ruderal, ditches or hedges; • Nesting birds could also be affected by any removal of hedges, trees and arable/grassland 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 identified as necessary, and based on proposals to ensure that potential impacts and any appropriate mitigation is developed acoordingly. In particular, species surveys may be required for badger, bats, GCN, reptiles and birds.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain hedge habitat and trees. These habitats provide opportunities for wildlife value in their own right, and connectivity to the wider landscape. Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP) or similar, should be followed to protect such habitats.

If notable or protected species are confirmed as present, mitigation requirements may include (all to be in accordance with relevant best practice guidance):

- Timing of works to avoid impacts on nesting birds, and potentially other species (dependent on the works);
- Habitat manipulation to deter animals such as GCN, reptiles and badger from the area and potentially avoid impacts;
- If bat roosts are found, where possible they should be retained. If they cannot be retained, 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 may involve sensitive methods and/or 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), this would require a NE licence for GCN;
- Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts, best practice construction measures and possible sett closure, potentially under NE licence;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats;
- Enhancement of habitats / habitat creation within the Site, including areas outside of the development footprint, to compensate for any habitat loss;

Enhancement opportunities may include:

- Green infrastructure incorporated into development design to provide opportunities for wildlife, such as green walls or roofs;
- Planting of wildlife-friendly species, such as pollinator friendly and/or native species;

- Incorporation of nesting and/or roosting opportunities for birds and bats.

Any mitigation or enhancement options would require a management plan to ensure viability of the methods and techniques. This may involve long term habitat management, detailed in a Landscape and Habitat Management Plan (LHMP). This should also include remidial measures should monitoring record divergence.

Overall Conclusion

Overall the Site is considered to be of low ecological value with boundary habitats of greatest value given the potential these provide for species, 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 hedges and 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
Additional Sites

Figure 5.1: Phase 1 Habitat Survey - Site 31

- Site boundary
- Target note
- Dry ditch
- Hedge with trees (native species-rich)
- Hedge with trees (species-poor)
- Intact hedge (native species-rich)
- Intact hedge (species-poor)
- Running water
- Tree line
- Arable
- Poor semi-improved grassland
- Scrub (scattered)/ Tall ruderal

Map Scale @ A3: 1:1,250

LUC

0 50 100 m

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CB: EB:Tzampoura_V LUCEDI 6949_Fig5-1_Phase1Site31_A3L 07/12/2016

Source: LUC

6 Site 32 – Land West of Southend Road (Maitland Lodge)

Survey Site	32	Location	Billericay

Site Overview

The Site is located south east of Billericay town, south east of the South Green and Great Burstead residential areas. Private houses and gardens are adjacent to the Site to the north and east, with arable land to the west and 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 Sites of national importance located 1km of the Site.

The following Local Wildlife Site is located in the vicinity of the Site:

- Parsonage Farm Green - ancient farm lane supporting species rich hedgerows with diverse ground flora, 775m east.

Species records

Four bat were records identified within the Site boundary:

- Common pipistrelle (two records);
- Soprano pipistrelle *Pipistrellus pygmaeus;*
- Brown long-eared *Plecotus auritus.*

Habitat Description

Amenity Grassland

The majority of the Site comprised amenity grassland located to the west of the Site adjacent to housing areas. These areas were used for recreation, and there was also evidence of horse grazing in the southern section. Species recorded included dandelion *Taraxacum*, white clover *Trifolium repens* and rare cranesbill *Geranium sp.*.

Hedge and Treelines

A native, potentially species rich hedge bordered the amenity grassland area. This was adjacent to residential gardens to the north, and arable fields to the west and south. The hedgerow was dominated by blackthorn, hawthorn and bramble, with a line of semi-mature oaks on the western boundary.

Standing Water

A pond was present within the area of grassland, near the northern boundary of the Site. The pond had very minimal water visible, being dominated by the aquatic invasive species parrot feather *Myriophyllum aquaticum*, with occasional bulrush *Typha sp.*

In addition, wet ditches ran along the western and northern boundary of the Site, alongside the hedges, with a minimal amount of vegetation.

Buildings, Hard-standing and Bare ground

The remaining land to the east of the Site comprised mostly hardstanding with buildings, including static homes, sheds and barns. One area of bare ground was noted in the north east of this area, comprising a horse paddock.

Fauna

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

Reptiles – Given the overall unsuitability of habitats on the site, largely comprising regularly managed grassland and built development, it is considered unlikely that reptiles are present in anything other than low numbers. If present in the wider area (for example, within adjacent gardens), reptiles may use hedges and dumped materials within built up areas for shelter and hibernation.

GCN – One pond was identified within the Site as well as wet ditches. Although not optimal given dense aquatic vegetation cover and/or overshading by hedgerows, these have potential to support breeding habitat for GCN whilst other ponds may be present in neighbouring gardens. In addition, grassland (if left unmanaged), hedge habitats and dumped materials may provide opportunities for foraging, sheltering and hibernation.

Badger –There is potential for badger to use the hedges for sett building, and badger may forage within grassland habitats if present in the wider area.

Bats – The trees present on Site are unlikely to provide roosting features for bats due to their age and size and lack of other surrounding cover. However, the hedge, treeline and ditch could support foraging and commuting habitat for bats. Furthermore, buildings present on the Site may provide opportunities for bats to roost.

Nesting birds – The trees and hedge habitat would support suitable opportunities for birds to nest, including species of notable and principle importance, such as those species noted in the local BAP. Given the short sward and regular management, it is highly unlikely that ground nesting birds would use the grassland areas.

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. No nationally designated Sites within the vicinity. One Local Wildlife Site, Parsonage Farm Green, was identified within the vicintiy of the Site. However works are not expected to impact upon the Site given the distance and presence of intervening habitats and development.
Habitats	The Site has limited ecological value, given existing development and recreational use. Habitats of the most value within this Site comprise the bordering hedges, ditch and trees. Hedges are listed as Priority Habitats in the Essex Biodiversity Action Plan. Hedges may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, with some hedges identified on site potentially species-rich. Habitat loss or ground disturbance may impact on hedges/trees and associated wildlife. Hedges and trees 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 could 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 hibernation 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 risk of reptiles sheltering/hibernating within hedges, and potentially within dumped materials; • GCN may breed within the pond and wet ditches (as well as those in the wider vicinity), and forage/shelter throughout the Site; • Badger setts, within hedge habitat; • Bats foraging and commuting along boundary habitats, particularly hedges, and potenially roosting within buildings; • Nesting birds within hedges, trees and buildings.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Survey and species surveys identified as necessary, and based on proposals to ensure that potential impacts and any appropriate mitigation is developed acoordingly. In particular, species surveys may be required for badger, bats, reptiles and nesting birds.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain boundary habitats where possible, including hedges, trees and ditches. 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 (all to be in accordance with relevant best practice guidance):

- Timing of works to avoid impacts on nesting birds, and potentially other species (dependent on the works);
- Habitat manipulation and/or destructive searches to deter animals such as reptiles and badger from the area and potentially avoid impacts;
- If bat roosts are found, where possible they should be retained, if they cannot be retained, 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 may involve sensitive methods and/or 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). This would require a NE licence;
- Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts, best practice construction measures and possible sett closure, potentially under NE licence;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats;
- Enhancement of habitats / habitat creation within the Site, including areas outside of the development footprint, to compensate for any habitat loss;

Other enhancement opportunities may include:

- Green infrastructure incorporated into development design to provide opportunities for wildlife, such as green walls or roofs;
- Planting of wildlife-friendly species, such as pollinator friendly species and/or native species;
- Incorporation of nesting and/or roosting opportunities for birds and bats.

Any mitigation or enhancement options would require a management plan to ensure viability of the methods and techniques. This may involve long term habitat management, detailed in a Landscape and Habitat Management Plan (LHMP). This should also include remidial measures should monitoring record divergence.

Overall Conclusion

Overall the Site has limited ecological value with the boundary habitats of greatest value, given the habitat they 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 hedges;
- Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term.

Basildon Borough Council
Ecology Surveys
Additional Sites

Figure 6.1: Phase 1 Habitat Survey - Site 32

- Site boundary
- Target note
- Intact hedge (native species-rich)
- Standing water
- Treeline
- Amenity grassland
- Bare ground
- Hard standing
- Standing water
- Hard standing/ Building

Map Scale @ A3: 1:1,000

LUC

Source: LUC

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CB:VT EB:Tzampoura_V LUCED1 6949_Fig6-1_Phase1Site32_A3L 07/12/2016

7 Site 33 – Dale Farm, Oak Lane, Crays Hill

Survey Site	33	Location	Crays Hill

Site Overview

The Site is located north of the heavily urbanised Basildon, in Crays Hill, north of the A127 and comprises a range of grassland and developed plots. The immediate surrounds are similar, supporting a range of grassland and development plots, as well as occasional small woodlands including one immediately to the north 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.

There are no Sites of national importance located within 1km of the Site.

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

- Noak Bridge Reserve - comprised of a grassland, scrub and woodland mosaic with ponds, comprising a notable assemblage of reptiles and amphibians, 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), 920m south west;
- Nutton's Wood – mixed deciduous woodland, 230m north east.

Species records

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

Habitat Description

Improved Grassland

In the south east corner of the Site, comprising around one third of the total area, was an area of improved grassland, grazed by horses. This supported common grass species, frequent plantain *Plantago sp*. and rare daisy *Bellis perennis*. Some areas were noted with locally abundant tall herbs such as mugwort *Artemisia vulgaris*, common nettles, dock *Rumex sp.* and creeping thistle.

Poor Semi-improved Grassland

Poor semi-improved grassland in the north west of the Site was heavily grazed by horses which were present at the time of survey. Other than common grasses, other species recorded included occasional dock, plantain, geranium species *Geranium spp.*, creeping cinquefoil *Potentilla reptans*, dandelion, white clover *Trifolium repens* and speedwell *Veronica sp.*

Hedges and Trees

Fields within the Site were mostly separated by native species-rich hedges with trees. These varied slightly in composition across the Site, but were generally dominated by hawthorn. Species poor defunt hedges were present within the southern field, running horizontally across the Site. These were comprised of hawthorn.

Caravan Site/ Buildings/ Hard-standing

A large area to the north of the Site comprised a residential area, with hard-standing, buildings and caravans. The main road, oak lane, which ran through the centre of the Site vertically, had several permanent buildings coming off it, and associated hard-standing for drives and garden patio areas; these areas had permanent residents. In the eastern part of the Site was a disused caravan site, with several static homes with patio areas, and a large amount of refuse and materials present. The garden areas in this part of the Site had become overgrown with ruderal vegetation such as mugwort and hogweed *Heracleum sp.*

Other Habitat

Small areas of ruderal habitat were noted towards the north west of the Site, along with areas of bare ground. A road ran through the Site vertically, which had an earth bank on the western side. A ditch was present within the Site, lining the road on the eastern side. The ditch was overgrown by hedges, with little water present. An area adjacent to the road, within the centre of the Site had a large amount of refuse. The refuse was dumped in and around the ditch, and included electrical goods to building materials.

Fauna

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

Bats – The hedges within the Site may afford suitable foraging and commuting habitat for bats. However many of the hedges were fairly sparse, and therefore less suitable, with the southernmost hedge providing a denser, more continuous canopy . This southern hedge also supported a number of mature trees which, along with few mature specimens within the residential areas, may support bat roost potential. Furthermore, buildings and structures such as wooden garages within the Site may present features for bats to roost.

Dormice – Although the Site and immediate surrounds did support a network of hedges and small woodlands, it is considered unlikely that dormouse would be present given the nature of the hedges (largely in poor condition), fragmentation associated with roads and built development and a lack of larger woodland blocks in the wider area.

Reptiles –The network of grassland, ruderal and derelict developed areas provides optimal habitat for common and widespread reptile species (such as slow worm, common lizard and grass snake), with hedges and dumped materials providing numerous opportunities for shelter and overwintering.

GCN – No ponds were identified within the Site itself, and the ditch is considered unsuitable for GCN due to the lack of egg laying vegetation, heavy over shading and very low water levels (which appeared to be very poor quality). However, several ponds and waterbodies have been identified within 250m of the Site, which could support populations of GCN. If present in the wider area, the network of grassland, ruderal and derelict developed areas provides optimal habitat for GCN, with hedges and dumped materials providing numerous opportunities for shelter and overwintering.

Badger – The grassland on the Site provided suitable foraging habitat for badgers, and the hedges may provide sett building opportunities. There were small patches of woodland in the wider landscape likely to support badger, including the area adjacent to the Site to the north east.

Nesting birds – The hedge habitat and trees supported suitable opportunities for birds to nest, including species of notable and principle importance, such as those species noted in the local BAP. In addition, buildings and temporary structures may support nesting opportunities for some bird species.

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. No Sites of national importance were identified within or within the vicitnity of the Site. No Local Wildlife Sites were identifed within the Site, however two Sites (Noak Bridge Reserve and Nutton's Wood were identified within the vicinity. Both Sites are considered to be of sufficient distance from the Site that

	significant impacts are unlikely, although increased residential development could result in increased recreational pressures and associated urban effects on Nutton's Wood in particular.
Habitats	The majority of the Site supportred habitats of negligible ecological value, given existing development and high levels of distrubance. Hedges and occasional mature trees provide some value, particularly those to the south. Hedges are listed as Priority Habitats in the Essex Biodiversity Action Plan. Hedges may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection, with some hedges identified on Site as potentially species-rich. Habitat loss or ground disturbance may impact on hedges/trees and associated wildlife. Hedges and trees 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 the Site, including reptile and GCN throughout. There is also potential for badger, bats and nesting birds to use boundary habitats in particular, with potential for birds and bats to also use buildings. Development within the Site could 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 hibernation 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: • Bats using hedges and tree lines for foraging and commuting, and potential for roosts within mature trees and buidlings/structures; • Reptiles and GCN throughout the Site, particualrly within grassland, ruderal and derelict developed areas; • Badgers, in particular potential for setts along hedges; • Nesting birds within hedges, trees and buildings / temporary structures.
Ecological Avoidance, Mitigation and Enhancement Options	
Further surveys Detailed development proposals must be informed by an updated Phase 1 Habitat Survey and species surveys identified as necessary, and based on proposals to ensure that potential impacts and any appropriate mitigation is developed acoordingly. In particular, species surveys may be required for bats, GCN, reptiles, badger and birds. **Avoidance, Mitigation and Enhancement Options** Any development proposals should seek to retain hedge habitat and mature trees where possible. These habitats comprise the highest value on Site, presenting opportunies for a range of protected and notable species and providing connectivity to the wider landscape. 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 protect the nearby LWS from contamination and/or pollution events. New major development could also result in an increase in recreational pressure on the LWS and therefore mitigation should include measures to guard against this (see below regarding inclusion of green infrastructure). If notable or protected species are confirmed as present, mitigation requirements may include (all to be in accordance with relevant best practice guidance): • Timing of works to avoid impacts on nesting birds, and potentially other species (dependent on the works); • Habitat manipulation to deter animals such as GCN, reptiles, and badger from the area and potentially	

avoid impacts;

- If bat roosts are found, where possible they should be retained, if they cannot be retained, 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 may involve sensitive methods and/or 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). This would require a NE licence for GCN;
- Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts, best practice construction measures and possible sett closure, potentially under NE licence;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats.
- Enhancement of habitats / habitat creation within the Site, including areas outside of the development footprint, to compensate for any habitat loss;

Other enhancement opportunities may include:

- Green infrastructure incorporated into development design to provide opportunities for wildlife, such as green walls or roofs;
- Planting of wildlife-friendly species, such as pollinator friendly species and/or native species;
- Incorporation of nesting and/or roosting opportunities for birds and bats.

Any mitigation or enhancement options would require a management plan to ensure viability of the methods and techniques. This may involve long term habitat management, detailed in a Landscape and Habitat Management Plan (LHMP). This should also include remidial measures should monitoring record divergence.

Overall Conclusion

Overall the Site has limited ecological value with the hedges (particularly species-rich examples) and trees of greatest value given the habitat they provide and contribution to habitat connectivity. The grassland offers little diversity given the heavy grazing practices.

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 and where possible enhance ecological connectivity through the site, in particular as provided by hedges, ditches and trees;
- Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term, with particular consideration for nearby LWSs.

Basildon Borough Council
Ecology Surveys
Additional Sites

Figure 7.1: Phase 1 Habitat Survey - Site 33

- Site boundary
- Target note
- Defunct hedge (species-poor)
- Earth bank
- Hedge with trees (native species-rich)
- Other habitat
- Standing water
- Bare ground
- Improved grassland
- Other tall herb and fern (ruderal)
- Poor semi-improved grassland
- Refuse-tip
- Caravan site/ Building
- Hard standing/ Building

Map Scale @ A3: 1:4,000

0 250 500 m

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CB: EB:Tzampoura_V LUCEDI 6949_Fig7-1_Phase1Site33_A3L 16/12/2016 Source: LUC

8 Site 34 – Additional Land at Greenleas Farm, South of London Road

Survey Site	34	Location	Billericay

Site Overview

The Site is located west of Billericay, just south of London Road A129. The Site is adjacent to agricultural fields (grassland and arable) to the south and west, with a mosaic of grassland, woodland and residential gardens to the north and east. The area also supports a network of hedges

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 Sites of national importance located in the vicinity of the Site.

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

- Round Wood - ancient woodland, 870m north west;
- Bluntswall Shaws – ancient deciduous woodland, 730m south.

Species records

One brown long-eared bat record was identified within the Site boundary.

Habitat Description

Semi-improved Neutral Grassland with Scattered Trees

The Site was primarily comprised of semi-improved neutral grassland, with a tussock structure. In addition, 11 mature willows were scattered throughout the Site. A defunct hedge was noted on the western boundary where the hedge became very patchy.

Hedges and Treelines

The Site was bordered by hedges with trees. Although the hedge did have a variety of species, some were non-native, and it was considered species-poor. Native species recorded included oak, blackthorn and poplar.

Standing Water

There was a pond on the western side of the Site, it was surrounded by shrubs on the margin along with marginal vegetation.

Fauna

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

Bats – The hedges with trees surrounding the Site and grassland covering the entire Site provides suitable habitat for foraging and commuting bats. These complemented areas of woodland and hedges in the wider landscape. The mature scattered trees across the Site and those within the hedge could also support features for bats to roost.

Reptiles – Grassland within the Site provided suitable habitat for all common and widespread reptile species (such as slow worm, common lizard and grass snake), for foraging, basking and sheltering. Furthermore, the hedges also provided shelter and hibernating opportunities, and the pond has specific potential to provide foraging habitat for grass snake.

GCN – One pond was identified within the Site, this has potential to support breeding habitat for GCN. In addition, grassland and hedge habitats provide opportunities for foraging, sheltering and hibernation. Woodland in the vicinity of the Site provides optimal habitat for GCN, and a further 3 ponds were identified from aerial imagery within 250m of the Site.

Badger – The hedge and treeline bordering the Site, particularly that which is adjacent or close to woodland, provides suitable sett building habitat for badgers. Furthermore, the grassland area had potential to provide foraging habitat for badgers.

Dormice – The hedges surrounding the Site were suitable to support dormouse, with good connectivity to hedge and woodland habitats in the surrounding area.

Nesting birds – The hedge habitat and trees within the Site support suitable opportunities for birds to nest, including species of notable and principle importance, such as those species noted in the local BAP. The grassland was unsuitable for ground nesting birds given the presence of mature trees which would deter nesting due to the increased risk of predation.

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 Local Wildlife Sites were idenfied within the vicintiy of the Site; Round Wood and Bluntswall Shaws. Given the nearest Site lies 730m away, impacts associated with development of the Site are considered unlikely.
Habitats	The Site provides a relatively diverse mosaic of habitats, including those of notable ecological value. Hedges are listed as Priority Habitats in the Essex Biodiversity Action Plan. Hedges may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection. Mature trees are important features, and often support an array of life, providing niche habitats. Habitat loss or ground disturbance may impact on hedges/trees and associated wildlife. Hedges and trees also provide ecological connectivity through the Site which could be fragmented as a result of development. In addition, neutral grassland and pond habitats offer several opportunities for 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 entire Site. Development within the Site could 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 hibernation 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: • Bats using the habitat mosaic for foraging, including the hedges, grassland/scattered tree habitats and pond. There is also potential for bat roosts within mature trees; • Dormice within hedges; • GCN may breed within the pond (as well as those in the wider vicinity), and forage/shelter throughout the Site; • Reptiles may similarly be present throughout the Site; • Badger setts within hedges; • Nesting birds if hedge and tree habitat is to be affected.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Survey and species surveys identified as necessary, and based on proposals to ensure that potential impacts and any appropriate mitigation is developed acoordingly. In particular, species surveys may be required for bats, dormice, GCN, reptiles, badger and birds.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain all hedge habitat, mature trees, and the pond where possible. Due to the layout and structure of the Site, this would leave limited area for development. These habitats present opportunies for a range of protected and notable species, as well as connectivity to the wider landscape.

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, including trees.

If notable or protected species are confirmed as present, mitigation requirements may include (all to be in accordance with relevant best practice guidance):

- Timing of works to avoid impacts on nesting birds, and potentially other species (dependent on the works);
- Habitat manipulation to deter animals such as GCN, reptiles, dormice and badger from the area and potentially avoid impacts;
- If bat roosts are found, where possible they should be retained, if they cannot be retained, 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, reptiles and dormice, may involve sensitive methods and/or 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), this would require a NE licence for GCN and dormice;
- Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts, best practice construction measures and possible sett closure, potentially under NE licence;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats;
- Enhancement of habitats / habitat creation within the Site, including areas outside of the development footprint, to compensate for any habitat loss;
- Given the habitats present throughout the Site, it is considered unlikely that development could be delivered here without resulting in significant ecological impacts. Should development proposals be persued here, this would need to include proposals for off-site compensation.

Other enhancement opportunities may include:

- Green infrastructure incorporated into development design to provide opportunities for wildlife, such as green walls or roofs;
- Planting of wildlife-friendly species, such as pollinator friendly species and/or native species;
- Incorporation of nesting and/or roosting opportunities for birds and bats.

Any mitigation or enhancement options would require a management plan to ensure viability of the methods and techniques. This may involve long term habitat management, detailed in a Landscape and Habitat Management

Plan (LHMP). This should also include remidial measures should monitoring record divergence.

Overall Conclusion

Although habitats within the Site are relatively common and widespread, the mosaic of habitat provides opportunities for a range of notable and/or protected species, with good ecological connectivity provided by hedge and tree habitat.

In conclusion it is considered that residential development could not be delivered at this Site without significant adverse ecological impacts associated with habitat loss, and potential impacts on protected species. If development proposals were to proceed here, unless at a very low scale, it is likely that extensive compensation would be required to off-set ecological impacts, with extensive ecological input required to determine whether this compensation measures were adequate including the following:

- 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 features through the site.
- Incorporation of green infrastructure within the development, and ensuring habitats are managed to benefit wildlife in the long-term, with particular consideration for nearby LWSs.
- Detailed and robust measures providing off-site compensation, to be assured in perpetuity.

Basildon Borough Council
Ecology Surveys
Additional Sites

Figure 8.1: Phase 1 Habitat Survey - Site 34

- Site boundary
- Target note
- Defunct hedge (species-poor)
- Hedge with trees (species-poor)
- Standing water
- Semi improved neutral grassland

Map Scale @ A3: 1:1,250

LUC

Source: LUC

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CB:VT EB:green_c LUCEDI 6949_Fig8-1_Phase1Site34_A3L 14/12/2016

9 Site 35 – Land Between London Road and A13, Pitsea

Survey Site	35	Location	Basildon

Site Overview

The Site comprises a linear area located between the A13 to the south and London road to the north, with Pitsea and South Benfleet residential areas to the west and east. The Site mostly comprises small residential plots, grassland fields and allotments. The wider landscape to the north is primarily agricultural, supporting grassland fields, with similar fields to the south of the A13 (and estuarine habitats associated with the Thames estuary further 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. In particular, the Benfleet and Southend Marshes SPA (also designated as Ramsar sites) are relatively close to the Site, located 3.6km to the south east.

The following Site of national importance is located wihtin 1km of the Site:

- Pitsea Marsh SSSI - mosaic of habitats supporting a rich flora and fauna including the nationally scarce stiff saltmarsh grass and several nationally scarce invertebrates, 650m south.

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

- Rushbottom Lane Flood Pound - supports marshy grassland (rare in Essex) and several County rarities including black sedge, 920m north east;
- Pitsea Mount - area of flower-rich grassland supporting an important invertebrate assemblage including the brown-banded carder bee and the digger wasp *Crossocerus binotatus,* 490m south west;
- "Untidy Industries" - post-industrial brownfield site supporting nine nationally threatened and 41 nationally scarce species including brown-banded carder bee and the shrill carder bee, 630m south west;
- Bowers Marshes - 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, 560m south;
- Pitsea Landfill – active landfill site enhanced for wildlife, 990m south west;
- Bowers Gifford Grassland - species rich lowland meadow supporting populations of hairy vetchling and diverse invertebrate interest, 55m south.

Species records

The following records for notable and protected species were identified within the Site boundary:

- Common pipistrelle bat (two records);
- Waxwing *Bombycilla garrulus* (three records).

Habitat Description

Allotments

Allotments comprised around a third of the whole Site, located towards the eastern end. The allotments were not accessible, however could be viewed from several vantage points across the Site. They supported a mosaic of habitats, including cultivated and uncultivated plots, as well as grassland areas and areas of debris/stored

materials.

Amenity Grassland

Small areas of amenity grassland were identified, mostly within the central part of the Site, and generally associated with developed plots of land.

Improved Grassland

Occasional patches of improved grassland were noted across the Site, primarily forming part of the residential gardens or extended land. One area of improved grassland was situated towards the western side of the Site, just east of the allotments, which appeared to support livestock such as horses and chickens.

Broadleaved Woodland (plantation)

Some small areas of plantation woodland were noted, primarily within or inbetween residential plots. These areas included mature trees, however, in the most part, comprised of younger specimens. Species recorded included ash, oak, hazel, ivy, poplar and bramble.

Broadleaved Woodland (semi-natural)

An area of semi-natural broadleaved woodland was identified. The woodland was dominated by poplar and ivy, with abundant hawthorn, blackthorn and bramble, and occasional oak and ash.

Neutral Grassland (semi-improved) / Tall Herb

A field to the far west of the Site comprised a mosaic of grassland with tall herb communities. Species included perennial rye-grass *Lolium perenne,* with occasional bristly ox-tongue *Picris echioides* and dock spp., with areas of ruderal species including abundant mugwort, hogweed and teasle *Dipsacus fullonum*.

Hedges and Treelines

Several hedges were noted across the Site, in the most part bordering residential plots, or the road, seperating features. Some of the hedgrows, more to the far west and far east of the Site had more diversity, comprising varying compositions of hawthorn and ash, with abundant ivy, occasional poplar and hazel. Hedgerows bordering some of the residential buildings were species poor, comprising single non-native species such as laurel *Laurus sp.* or privet *Ligustrum sp*.

Dense scrub

Two small areas of dense scrub were noted either side of the grassland / tall herb mosaic. These were dominated by bramble.

Other

Areas of hard-standing and buildings were recorded scattered across the Site. These included residential and commercial buildings, as well as a church. Two small areas could not be accessed or viewed, due to high fencing.

Fauna

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

Bats – The mosaic of habitats through the site may provide foraging opportunities for bats, although the Site is relatively isolated between two major roads and with frequent developed areas and this would be likely to reduce its value for bats. Mature trees and buildings present on Site, particularly older buildings such as the church, have potential to support roosting bats.

Reptiles – The mosaic of habitats across the site (particularly grassland, ruderal and allotment habitats) are likely to provide a range of opportunities for reptiles including foraging, shelter and hibernation.

GCN – No ponds were identified within the Site itself. Ponds identified within the wider area are isolated from the Site given the roads to the north and south. It is therefore considered unlikely that GCN will be present on the Site.

Badger – The site supports a mosaic of habitats with potential to provide foraging and sett building opportunities for badgers, in particular woodland, scrub, hedges and the allotments. Although the Site is relatively isolated from the wider area by roads, this would not prevent badger reaching and using the Site. Nesting birds – The hedge habitat, scrub, trees and buildings all support suitable opportunities for birds to nest, including species of notable and principle importance, such as those species noted in the local BAP. Dormice – Although suitable habitats are present within the Site, these are highly fragmented and are also isolated from the wider landscape. Therefore it is highly unlikely dormouse would be present.	
Ecological Appraisal	
Designated Sites	No internationally designated Sites are present within or adjacent to the Site, however Benfleet and Southend Marshes and the Thames Estuary and Marshes SPAs/Ramsars are hydrologically connected to SSSIs, such as Pitsea Marsh, and other associated local designations to the south 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. In addition, these designated Sites are located south of the A13, a significant barrier, and it is therefore largely considered unlikely that proposed development would impact upon the sites. However, given the distance to these designations, there is potential for development of this Site to result in increased recreational pressure. Given the size of the Site and the potential amount of residential development proposed, it is unlikely that this would result in an increase in number of visitors which may impact on the conservation status' of these designations, however this will need to be determined through a Habitats Regulations Assessment. Six Local Wildlife Sites are located within the vicinity of the Site, however, as above, given the distance and isolation of the Site due to roads to the north and south, impacts resulting from development on these sites is considered unlikely.
Habitats	Overall, the habitats present on the Site are of low value, comprising relatively small and fragmented areas of habitats subject to high levels of disturbance associated with developed areas and associated infrastructure, and given isolation from the wider landscape. Any value associated with these habitats therefore relates to the potential to support notable/protected species as discussed below.
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 the hedge, woodland, grassland/tall herb and allotments likely to provide greatest opportunies. Buildings and mature trees also have potential to support birds and bats, particularly older buildings such as the church. Development within the Site could 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 hibernation 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: • Bats foraging and commuting through the Site, and potential roosts within mature trees and buildings; • Reptiles associated with grassland and tall herb, allotments, woodland and scrub; • Nesting birds within hedges, scrub, trees and buildings;

	• Badger setts, within hedges, scrub, woodland and allotments;

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Survey and species surveys identified as necessary, and based on proposals to ensure that potential impacts and any appropriate mitigation is developed acoordingly. In particular, species surveys may be required for bats, reptiles, birds and badger.

Avoidance, Mitigation and Enhancement Options

Given the low value of the habitats present, including as a result of exsiting development and isolation, it is considered that development could be delivered here without particular requirements to retain existing habitats. Higher value habitats which may be conisdered for retention would include hedges and mature trees. Best practice construction methods as detailed within a Construction and Environmental Management Plan (CEMP), or similar, should be followed to protect any retained habitats.

If notable or protected species are confirmed as present, mitigation requirements may include (all to be in accordance with relevant best practice guidance):

- Timing of works to avoid impacts on nesting birds, and potentially other species (dependent on the works);
- Habitat manipulation to deter animals such as reptiles and badger from the area and potentially avoid impacts;
- If bat roosts are found, where possible they should be retained, if they cannot be retained, 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 may involve sensitive methods and/or 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, best practice construction measures and possible sett closure, potentially under NE licence;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats;
- Enhancement of retained habitats on Site to maintain habitat for protected species, if present.

Other enhancement opportunities may include:

- Green infrastructure incorporated into development design to provide opportunities for wildlife, such as green walls or roofs;
- Planting of wildlife-friendly species, such as pollinator friendly species and/or native species;
- Incorporation of nesting and/or roosting opportunities for birds and bats.

Any mitigation or enhancement options would require a management plan to ensure viability of the methods and techniques. This may involve long term habitat management, detailed in a Landscape and Habitat Management Plan (LHMP). This should also include remidial measures should monitoring record divergence.

Overall Conclusion

In general, habitats present on the Site are common and widespread and have limited ecological value, with much of it comprising buildings and hardstanding. Other areas of semi-natural habitat, such as neutral grassland, tall herb, scrub, hedges and allotments, are of relatively low ecological value due to existing disturbance and fragmentation/isolation.

In conclusion it is considered that residential development may be delivered at this Site without significant adverse ecological impacts, and delivering an enhancement ecologically, 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.

Basildon Borough Council
Ecology Surveys
Additional Sites

Figure 9.1: Phase 1 Habitat Survey - Site 35

- Site boundary
- Target Notes
- Hedge with trees (native species-rich)
- Hedge with trees (species-poor)
- Intact hedge (species-poor)
- Other habitat
- Allotment
- Amenity grassland
- Broadleaved woodland (plantation)
- Broadleaved woodland (semi-natural)
- Building
- Hard standing
- Improved grassland
- Scrub (dense/continuous)
- Building/ Hard standing
- Neutral grassland (semi-improved)/ Other tall herb and fern (ruderal)
- Not accessible

Map Scale @ A3: 1:6,000

LUC

0 250 500 m

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CB:VT EB:Tzampoura_V LUCEDI 6949_Fig9-1_Phase1Site35_A3L 16/12/2016

Source: LUC

10 Site 36 – Hovefields and Honiley Neighbourhood Area

Survey Site	36	Location	Wickford

Site Overview

The Site is located to the South of Wickford, with the A127 forming its southern boundary (and Basildon further to the south). The surrounding area supports a range of grassland fields and development plots, with the Site itself mostly comprising small residential plots of buildings or caravans, and 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.

No Sites of national importance are located within 1km of the Site.

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

- Burnt Mills - open mosaic habitats on previously built land, important invertebrate assemblage, good mix of wetland species, 45m south
- The Wick Country Park - unimproved grassland supporting the Essex red data list species pepper saxifrage, 500m north east

Species records

Records for notable and protected species were identified within the Site boundary, including:

Mammals:

- Common pipistrelle bat (five records);
- Noctule bat *Nyctalus noctula;*
- Eurasian badger *Meles meles.*

Reptiles:

- Slow worm *Anguis fragilis* (four records);
- Common lizard *zootoca vivipara.*

Amphibians:

- Great crested newt *Triturus cristatus* (four records);
- Smooth newt *Lissotriton vulgaris* (ten records).

Birds:

A range of garden/woodland and farmland bird species, including:

- Reed bunting *Emberiza schoeniclus*;
- Redwing *Turdus iliacus*;
- Linnet *Linaria cannabina*;
- Fieldfare *Turdus pilaris*;
- Dunnock *Prunella modularis*.

Habitat Description

Hedges

Several native hedges were noted across the Site, in the most part bordering either residential plots, roads or fields. The hedges were mostly comprised of hawthorn and blackthorn, with occasional dogwood, oak, ash and bramble. This may have included species-rich hedges.

Improved Grassland

Improved grassland was noted across a large proportion of the Site, with horse grazing frequent. These habitats were dominated by perennial rye-grass, with occasional patches of tall herb such as dock and nettles.

Poor Semi-Improved Grassland

One area of poor semi-improved grassland was located in the north west corner of the Site, supporting dominant perrenial rye-grass, cock's-foot, abundant dock, occasional dandelion, ribwort plantain, bristly oxtongue and ragwort, and rare red clover, white clover, creeping thistle and teasle.

Buildings / Hard-Standing / Caravan Site

A large amount of the Site comprised residential plots including hard standing, buildings, small patches of amenity grassland (gardens) and caravans, these areas were mostly located in the centre of the Site, off Hovefield Avenue, and at the eastern end of the Site off Honiley Avenue.

Scrub / Broadleaved Woodland (plantation)

An area of scrub / woodland was noted towards the east of the Site, extending from the A127. Although this area could not be accessed for full assessment, species visible from adjacent land comprised hawthorn, blackthorn, wild privet, oak, ash and dogwood.

Fauna

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

Bats – Hedges within the Site, the small patch of scrub/woodland and grassland areas may afford suitable foraging and commuting habitat for bats. Additionally, the buildings on Site, including some barn like structures, and mature trees may support roosting bats.

Reptiles – The grassland, hedges, scrub / woodland and ephemeral habitats, particularly where rubble piles have been created, provide suitable foraging, basking, resting and hibernation opportunities for the common and widespread reptile species.

GCN – One pond was identified during the survey. Although this held little water at the time of the survey, and had been used to dump refuse and vegetation, use by GCN cannot be ruled out (historically or currently). A further pond within the Site was identified using aerial imagery, but was not viewed during the survey due to access constraints. In addition, ponds were identified within the vicinity of the Site using aerial imagery, of which at least two lie within 250m of the Site. The terrestrial habitats on the site would provide opportunities for GCN to forage, shelter and hibernate, if present, in particular grassland, hedges, scrub / woodland and ephemeral areas.

Badger – The fields within the Site and hedges/scrub/woodland provide potential foraging habitat for badgers, whilst hedges/scrub/woodland habitat may provide suitable habitat for sett building.

Nesting birds – Hedges, scrub, trees and buildings all support suitable opportunities for birds to nest, including species of notable and principle importance, such as those species noted in the local BAP.

Dormice – Although habitat within the Site had suitability for dormice, the wider landscape is fragmented, and connectivity to this is very poor, therefore it is considered highly unlikely dormice would be present 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. Two Local Wildlife Sites are located within the vicinity of the Site; Wick Country Park which lies to the north east, and Burnt Mills to the south. Given the distance of the Sites and poor ecological connectivity, it is not considered likely there will be significant off Site impacts.
Habitats	Most of the Site has limited ecological value, comprising residential plots and improved grassland in the most part, with semi-natural habitats subject to significant disturbance and fragmentation. However the hedge and tree habitat provide several opportunities for a range of wildlife. Hedges are listed as Priority Habitats in the Essex Biodiversity Action Plan. Hedges may also qualify as 'important hedgerows' under the Hedgerow Regulations and may therefore be subject to specific protection. Habitat loss or ground disturbance may impact on hedges/trees and associated wildlife. Hedges and trees 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 semi-natural habitat through the site. Biologival records identify a number of protected or notable species as present within the Site, including those which are on the Essex Biodiviersity Action Plan such as bats and GCN. Development within the Site could result in habitat loss, disturbance and impact upon a protected and notable species with risk of killing and injury, loss of foraging, resting/sheltering and/or hibernation habitat and further 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: • Bats foraging through the site, and potential roosts within mature trees and buildings; • Reptiles associated with grassland/ephemeral habitats, as well as hedgerows and scrub/woodland, and in particualr sheltering within debris; • GCN breeding within the ponds, as well as using terrestrial habitats as above for reptiles; • Nesting birds within hedge, scrub/woodland, trees and buildings; • Badger setts, particularly within scrub /woodland and hedges.

Ecological Avoidance, Mitigation and Enhancement Options

Further surveys

Detailed development proposals must be informed by an updated Phase 1 Habitat Survey and species surveys identified as necessary, and based on proposals to ensure that potential impacts and any appropriate mitigation is developed acoordingly. In particular, species surveys may be required for bats, reptiles, birds, GCN and badger.

Avoidance, Mitigation and Enhancement Options

Any development proposals should seek to retain hedges and mature trees where possible.

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 (all to be in accordance with relevant best practice guidance):

- Timing of works to avoid impacts on nesting birds, and potentially other species (dependent on the works);
- Habitat manipulation to deter animals such as GCN, reptiles and badger from the area and potentially avoid impacts;

- If bat roosts are found, where possible they should be retained, if they cannot be retained, 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 may involve sensitive methods and/or 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), this would require a NE licence for GCN;
- Measures to prevent impacts on badger including sensitive timing of works in the vicinity of setts, best practice construction measures and possible sett closure, potentially under NE licence;
- Sensitive design of any external lighting to minimise lightspill to adjacent habitats;
- Enhancement of habitats / habitat creation within the Site, including areas outside of the development footprint, to compensate for any habitat loss;

Other enhancement opportunities may include:

- Green infrastructure incorporated into development design to provide opportunities for wildlife, such as green walls or roofs;
- Planting of wildlife-friendly species, such as pollinator friendly species and/or native species;
- Incorporation of nesting and/or roosting opportunities for birds and bats.

Any mitigation or enhancement options would require a management plan to ensure viability of the methods and techniques. This may involve long term habitat management, detailed in a Landscape and Habitat Management Plan (LHMP). This should also include remidial measures should monitoring record divergence.

Overall Conclusion

In general, habitats present on the Site are common and widespread and have limited ecological value, with much of it comprising buildings and hardstanding. Other areas of semi-natural habitat are of reduced value due to existing disturbance and fragmentation/isolation.

In conclusion it is considered that residential development may be delivered at this Site without significant adverse ecological impacts, and delivering an enhancement ecologically, 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.

Basildon Borough Council
Ecology Surveys
Additional Sites

Figure 10.1: Phase 1 Habitat Survey - Site 36

- Site boundary
- Target note
- Defunct hedge (species-poor)
- Intact hedge (species-poor)
- Other habitat/ Road
- Amenity grassland
- Building
- Ephemeral/short perennial
- Improved grassland
- Poor semi-improved grassland
- Standing water
- Bare ground/ Spoil
- Building/ Hard standing
- Caravan site/ Hard standing/ Bare ground
- Scrub/ Plantation woodland
- Hard standing/ Amenity grassland/ Building

Map Scale @ A3: 1:4,000

LUC

0 100 200 m

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

CB:VT EB:Tzampoura_V LUCEDI 6949_Fig10-1_Phase1Site36_A3L 16/12/2016

Source: LUC

Appendix 1

Target Notes

Site 30	
Target Note	Comments
1.	Line of four semi mature oak trees
2.	Wide field margin with variety of grasses and occasional herbs (not in flower).
3.	Hedge with dry ditch (just outside boundary itself), dominated by hawthorn, dog rose with abundant poplar, blackthorn and bramble. Occasional oak, field maple, ash and willow, rare silver birch and cherry.
4.	Arable field, the crop had recently been harvested.

Site 31	
Target Note	Comments
1.	Poor semi-improved grassland, dominated by perennial rye-grass and cock's-foot. Occasional dandelion and ragwort. A patch of locally abundant creeping thistle in this location.
2.	A patch of locally abundant creeping thistle
3.	Locally abundant bramble field layer of hedgerow
4.	Locally abundant field layer of bramble and nettle
5.	Grass is generally longer on this field section, more suitable for reptiles. A patch of locally abundant creeping thistle in this location.
6.	A dry ditch bordering the field. Young silver birch present at this location.
7.	Occasional shrubs along this part of the ditch, hawthorn and young oak.
8.	An area of dumped hay with locally abundant bramble and nettle.
9.	Locally abundant creeping thistle and white dead nettle.
10.	A native species-rich hedge with trees forming part of a woodland edge. Dominated by oak with frequent hazel and hawthorn. Rare ash and occasional blackthorn.
11.	Patch of rushes
12.	A dry ditch with ruderal tall herbs including nettles and thistle.

Site 31	
13.	A ditch with very slowly running water, bordering the field. A tree line borders the ditch with ash, hawthorn, field maple, oak, willow and bramble.
14.	A native species rich hedgerow, dominated by hawthorn, bramble, poplar and dog rose, with occasional young oak and hazel.
15.	A species poor hedge with trees dominated by bramble with occasional mature oak tree.
16.	An intact species poor hedge, comprising dominant poplar and hazel, with occasional bramble.
17.	An area of scattered scrub and tall herbs. Dominant in bramble and nettle, with occasional ash closer to hedge line.

Site 32	
Target Note	Comments
1.	An area of amenity grassland, seeming to be regularly mown very short. A localised patch of tall herb dominated by nettle with frequent dock.
2.	A native hedge bordering the garden area, dominated by bramble, hawthorn and blackthorn.
3.	A tree line along the bottom end of the garden, western boundary of the Site comprised of semi-mature and mature oaks.
4.	Area comprised of hard standing and buildings of mixed typology, including many static home, sheds, old cars and material storage such as bricks and tyres.
5.	An area of bare ground, comprising a mud/sand substrate used to keep horses.
6.	Amenity grassland area used for recreation and horses. Mown very short. In some areas herb such as dandelion and white clover can be identified. Rare cranesbill
7.	Pond situated in the north east corner of the amenity grassland area. Saturated with parrot feather, with occasional bull rushes.

Site 33	
Target Note	Comments
1.	Along the path of hard standing, a line of ruderal vegetation is adjacent to the fence, creeping through from field next door. Vegetation comprises mugwort, nettles and thistle.
2.	Improved grassland with perennial rye-grass, frequent ribwort plantain and rare daisy. Horses grazing and kept in the field, three noted at time of survey.
3.	An area of bare ground / soil within an area which appeared to be multi-use

Site 33	
	functional farm and construction operations. Dumping of materials.
4.	A patch of tall herb / ruderal vegetation: with dominant mugwort and nettle, occasional dock and rare teasle.
5.	An area of semi-improved grassland, grazed by horses. Perennial rye-grass, bent grass and cocks-foot. Occasional dock, ribwort plantain, geranium, cinquefoil and dandelion. Rare Veronica sp.
6.	Vegetated bank with ruderal tall herb including nettles and mugwort.
7.	A road / track running along the centre of the site north to south.
8.	A defunct hedge, comprising sporadic patches of hawthorn
9.	A defunct hedge, comprising sporadic patches of hawthorn
10.	Disused caravan site with buildings, many of which have been damaged/burnt down. Also large areas of waste and refuse, some with established ruderal vegetation such as mugwort, nettles and bindweed. Patchy ruderal tall herb and scrub e.g butterfly bush.
11.	A residential area, partially used as a caravan site with some planting / garden areas
12.	Some patchy areas with locally abundant taller herbs such as mugwort, nettles, dock and thistle.
13.	Cannot access to survey properly, appears to be taller growing grasses and some herbs.

Site 34	
Target Note	Comments
1.	Grassland covers most of site, and is tussocky. Time of year limits ID, however perennial-rye and hair grass were noted. Also red clover and white clover.
2. – 11.	Mature willow Salix sp.
12.	A hedge with trees borders the Site. The hedge comprises several ornamental species, however there is some native species recorded including oak, blackthorn and poplar
13.	The hedge becomes very sparse and fragmented.

Site 35	
Target Note	Comments
1.	An area of semi-improved neutral grassland, dominant in perennial rye-grass. With occasional bristly ox-tongue, dock, large member of the pea family (likely

Site 35	
	goat's-rue), vetches, dock and dandelion. Rare ragwort.
2.	Areas in the middle of the habitat dominated by tall herbs. Abundant mugwort, hogweed, teasle and dock.
3.	Woodland belt, dominated by ivy and poplar, abundant hawthorn, blackthorn, bramble. Likely plantation.
4.	An area of broadleaved plantation (likely) woodland. Comprising ash, oak, hazel, ivy, poplar and bramble.
5.	Laurel hedge
6.	Hedge dominated by hawthorn and ash, with abundant ivy, occasional poplar and hazel.
7.	Privet hedge surrounding a residential property.
8.	Road/track running vertically down the Site, in-between allotments and other land.
9.	An area of residential housing with gardens
10.	An area of broadleaved plantation (likely) woodland towards the back of residential area / care home, this was generally young growth.
11.	A patch with tall herb.
12.	An area of scrub lining the field, dominated by bramble.

Site 36	
Target Note	Comments
1.	An area of tarmac / hard standing / very recently (within the last few months) built up into residential plot
2.	Large area of improved grassland, grazed by horses
3.	Bricks and building remains dumped in this location
4.	Grassland comprising perennial rye, cocks foot, dock, dandelion, plantain, bristly ox tongue, ragwort, red clover, white clover, thistle, rare teasle.
5.	Improved grassland grazed by horses. Dock, ragwort and thistle.
6.	Residential plots with buildings, static homes and garden areas.
7.	Residential properties, of a 'temporary' nature.
8.	A field of improved grassland comprising perennial rye and cocks foot, with ragwort present.
9.	A pond, mostly dried up, with refuse dumped in it and ruderal herb / scrub
10.	An area of improved grassland, used for grazing horses

Site 36	
11.	Residential area comprising buildings, hardstanding and ornamental lawn / gardens
12.	Improved grassland grazed by horses.
13.	Improved grassland grazed by horses.
14.	Residential area comprising buildings, hardstanding and ornamental lawn / gardens
15.	Hedgerow dominated by hawthorn and blackthorn.
16.	Hedgerow, bordering field of improved grassland, comprising hawthorn, blackthorn, dog wood, ash and locally frequent bramble.
17.	A patchy, defunct hedge comprising hawthorn and blackthorn.
18.	A road running vertically through the site with residential plots either side.
19.	A road running horizontally across the site with fields either side towards the west and residential plots to the east.
20.	A small road running vertically to a small residential area.
21.	A track through the field