

Preliminary Ecological Appraisal

Land south of Highfield Road,
Minster, Isle of Sheppey

Contents

1.0 INTRODUCTION	4
BACKGROUND.....	4
SITE CONTEXT AND STATUS.....	4
2.0 METHODOLOGY	6
DESKTOP STUDY.....	6
PRELIMINARY ECOLOGICAL APPRAISAL.....	6
PROTECTED SPECIES ASSESSMENTS.....	6
LIMITATIONS.....	7
3.0 RESULTS	7
DESKTOP STUDY.....	7
PHASE 1 HABITAT SURVEY.....	12
PROTECTED SPECIES.....	13
<i>BADGERS</i>	14
<i>HAZEL DORMICE</i>	14
<i>GREAT CRESTED NEWTS (GCN)</i>	14
<i>REPTILES</i>	14
<i>BIRDS</i>	14
<i>OTHER SPECIES</i>	14
4.0 DISCUSSION	15
PROTECTED SPECIES.....	18
<i>DORMICE</i>	19
ECOLOGICAL ENHANCEMENTS.....	21
5.0 IMPACT ASSESSMENT	22
6.0 CONCLUSIONS	24
7.0 REFERENCES	26
APPENDIX 1: HABITAT MAP	28
APPENDIX 2: PHOTOS	30
APPENDIX 3: SPECIES LIST	34
APPENDIX 4: BIOLOGICAL RECORDS	37

LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

1.1 The Ecology Partnership was commissioned by JB Planning to undertake a preliminary ecological appraisal (PEA) of land south of Highfield Road, Minster, Isle of Sheppey, Kent.

1.2 The key objectives of a PEA (CIEEM 2017) are to:

- Identify the likely ecological constraints associated with a project;
- Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
- Identify the opportunities offered by a project to deliver ecological enhancement.

1.3 This report comprises the:

- Legislative and planning context (Section 1);
- Assessment methodologies (Section 2);
- Results (Section 3);
- Implications for development (Section 4);
- An impact assessment (Section 5); and
- Conclusions (Section 6).

Site Context and Status

1.4 The site largely comprised an area of horse-grazed land to the south of Highfield Road. This was bound by Highfield Road to the north, dense scrub to east, grazed farmland to the south, and, Southdown Reservoir to the west. The site covers *c.* 1.5ha and is located on the western outskirts of Minster, near the top of a hill (TQ 93393 72554). The wider surrounding area is largely comprised of residential areas to the north, east and west, and, agricultural land to the south.

1.2 The approximate red line boundary of the site is shown in Figure 1 below.



Figure 1: Approximate location of the red line boundary showing the wider landscape

Description of Proposed Development

- 1.5 The outline proposals comprise the development of up to 19 residential properties, with open space, landscaping and a community orchard

Planning Policies

- 1.6 The outline application was assessed against policy guidance provided by the National Planning Policy Framework, as well as relevant planning policies from Swale Borough Council. These policies included the following which are considered relevant to Ecology, Biodiversity and Nature Conservation:

Swale Borough Local Plan (2017):

- Policy CP7 - Conserving and enhancing the natural environment - providing for green infrastructure;
- Policy DM28 - Biodiversity and geological conservation;
- Policy DM29 - Woodlands trees and hedges;

- Policy DM30 - Enabling development for landscape and biodiversity enhancement

1.7 This report addresses the site in relation to nature conservation and wildlife and indeed to the local planning requirements as well as national planning and nature conservation legislation.

1.8 The site was surveyed to assess its ecological value and to ensure compliance with national and local plan policies. The report has been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practise for Planning and Development.

2.0 Methodology

Desktop Study

2.1 A desktop study search was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and an internet-based aerial mapping service (maps.google.co.uk) was used to understand the habitats present in and around the survey area and habitat linkages and features (ponds, woodlands etc.) within the wider landscape. Satellite imagery, historic ecology report and recent photographs have also been used to inform the baseline of the site.

Preliminary Ecological Appraisal

2.2 An extended preliminary ecological appraisal was undertaken on 11th June 2020 by surveyors Matt Pendry BSc (Hons) GradCIEEM and Kieran McGranaghan BSc (Hons) PGDip QCIEEM. The surveyors identified the habitats present, following the standard 'Phase 1 habitat survey' auditing method developed by the Joint Nature Conservancy Council (JNCC). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010).

Protected Species Assessments

2.3 Any evidence of protected species was recorded. Standard methods of search and measures of presence, or likely presence based on habitat suitability were used for bats in trees and buildings (Collins 2016), breeding birds¹, dormouse (Bright *et al.* 2006),

great crested newt (ARG 2010), reptiles (Froglife 2015), badgers (Creswell *et al.* 1990) and water vole (Strachan *et al.* 2011).

Limitations

2.4 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.

2.5 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment it is considered reasonably likely that protected species may be present.

3.0 Results

Desktop Study

- 3.1 There is a single internationally designated area within 10km of the site (Figure 3):
- **The Swale (SPA) and Ramsar site**, approximately 1.6km south; Qualifying features for SPA and Ramsar include internationally significant numbers of non breeding dark bellied Brent goose (*Branta bernicla*), dunlin (*Calidris alpina*), as well as its breeding bird and waterbird assemblages;
 - **Medway Estuary & Marshes Special Protection Area (SPA) and Ramsar site**, approximately 1.7km south; Qualifying features for SPA and Ramsar include internationally significant numbers of breeding avocet (*Recurvirostra avosetta*), and, little tern (*Sternus albifrons*); and non breeding dark bellied Brent goose (*Branta bernicla*), dunlin (*Calidris alpina*), grey plover (*Pluvialis squatarola*), pintail (*Anas acuta*), redshank (*Tringa totanus*), ringed plover (*Charadrius hiaticula*), and, shelduck (*Tadorna tadorna*).

- **Thames Estuary & Marshes SPA and Ramsar**, approximately 4.7km north-west; Qualifying features for SPA and Ramsar include internationally significant numbers of non-breeding avocet (*Recurvirostra avosetta*), hen harrier (*Circus cyaneus*), grey plover (*Pluvialis squatarola*), redshank (*Tringa totanus*), ringed plover (*Charadrius hiaticula*), redknot (*Calidris islandica*), dunlin (*Calidris alpina*), and, black-tailed godwit (*Limosa limosa*);
- **Foulness SPA and Ramsar**, approximately 9.4km north; Qualifying features for SPA and Ramsar include nationally important numbers of breeding avocet (*Recurvirostra avosetta*), sandwich tern (*Sterna sandvicensis*), common tern (*S.hirundo*) and little tern (*Sternus albifrons*); as well as nationally important wintering populations of hen harrier (*Circus cyaneus*).
- **Benfleet and Southend Marshes SPA and Ramsar**, approximately 9.7km north; Qualifying features for SPA and Ramsar include internationally important numbers of overwintering waterfowl, and, winter migratory dark bellied Brent goose (*Branta bernicla*), grey plover (*Pluvialis squatarola*), knot (*Calidris canutus*), and, dunlin (*Calidris alpina*).

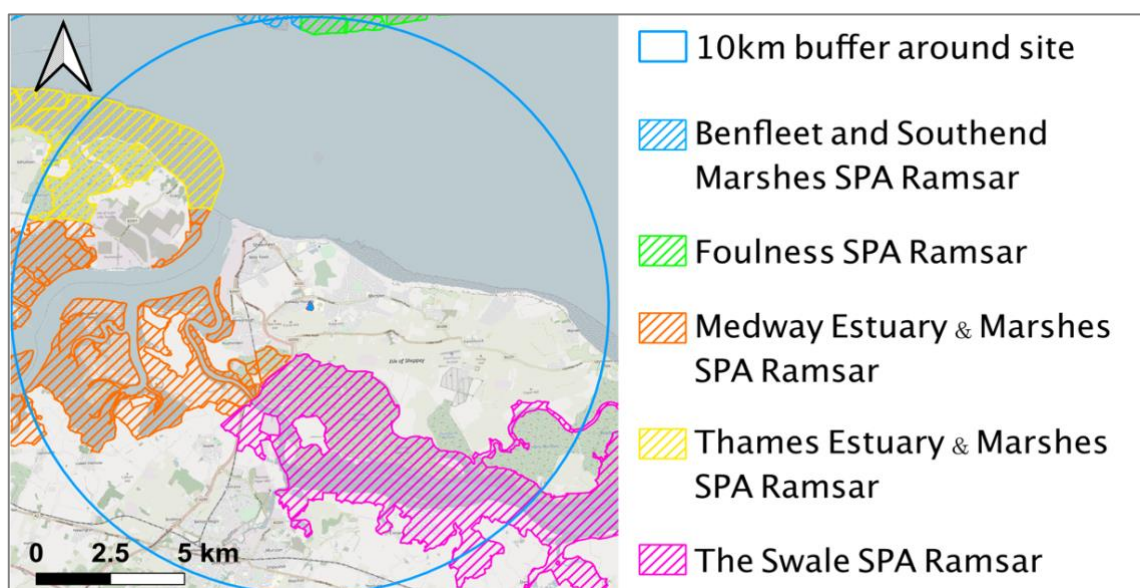


Figure 3: Internationally designated sites within 10km of the site:

Data sourced from naturalengland-defra.opendata.arcgis.com

3.2 Two National Statutory Designations are located within 2km of the site: **The Swale** Site of Special Scientific Importance (SSSI) and **Medway Estuary & Marshes** SSSI, located c.1.6km south and c.1.7km south-west of the site respectively (see Figure 4 below).

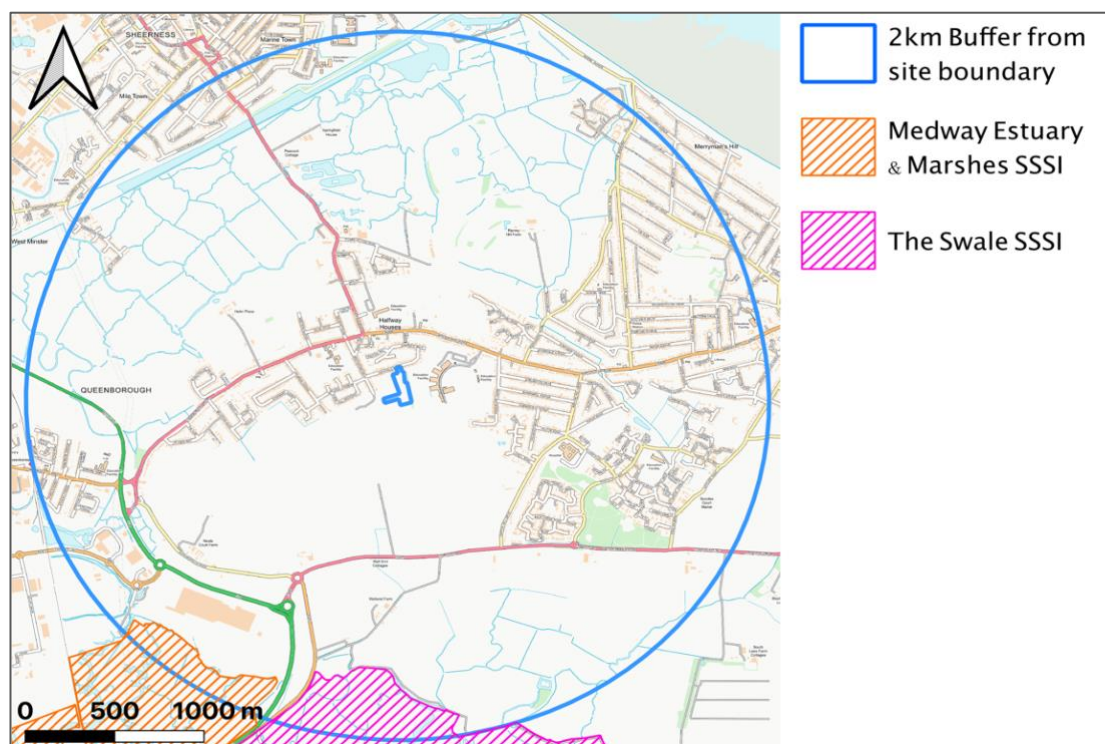


Figure 4: National statutory designated sites within 2km of the proposed development site Data sourced from naturalengland-defra.opendata.arcgis.com

- 3.3 Two non-statutory designated sites were located within 2km of the site:
- Diggs and Sheppey Court Marshes (LWS), located 900m north-west, designated for its grazing marsh habitats; and,
 - Minster Marshes LWS, located 950m north, also designated for its grazing marsh habitats.
- 3.4 A number of priority habitats are located in the surrounding area, including:
- Numerous priority deciduous woodlands, including the south-eastern corner of the site, and, the area directly adjacent to the south-west of the site.
 - A traditional orchard approximately 360 m to the south-east.

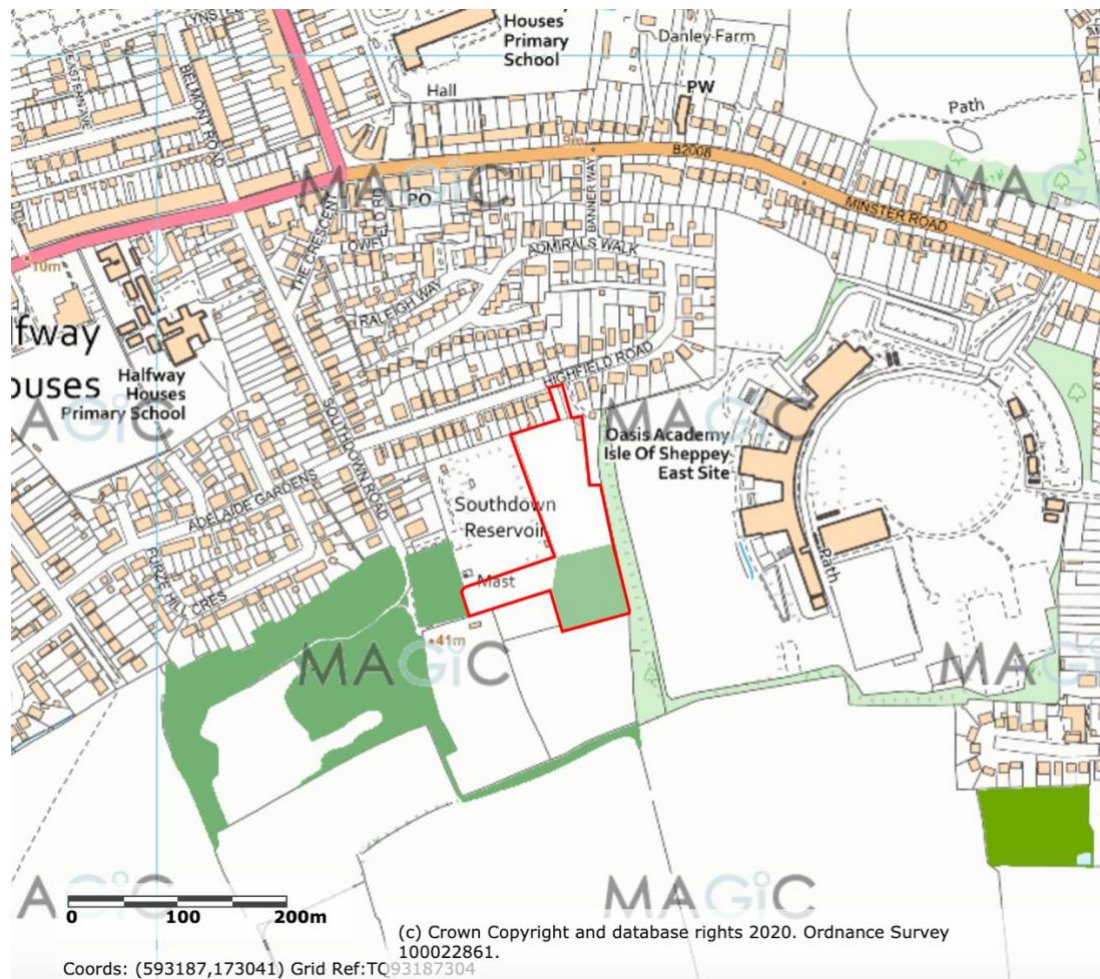


Figure 5: Priority habitats in the local vicinity of the site: broad-leaved semi-natural woodland (dull green), and, traditional orchards (lime green).

- 3.5 OS mapping found no ponds within 250m of the site boundary.
- 3.6 The search revealed two European Protected Species (EPS) licences within a 2km radius around the red line boundary. This included a historic licence for destruction of a resting place for soprano pipistrelle, 215m east of the site in 2013; and, a historic licence for destruction of a resting place for great crested newt 1.75km west of the site in 2013.
- 3.7 A 2km records search was requested from Kent and Medway Biological Records Centre (KMBRC). The records closest to site, recorded within the last 10 years, and relevant to the habitats on site, have been included in Table 1 below.

Table 1: Notable species records within 2km of the site in the last 10 years² (note: only species for which suitable habitats are present on site are included below)

Species (and number of records)	Status	Distance from site of closest record	Date of closest record
Great Crested Newt (11 records)	Wildlife and Countryside Act (1981 as amended) Schedule 5; Habitats Directive Annex 2 & 4; NERC Act (2006) Section 41	475 east	02/04/2014
Slow worm <i>Anguis fragilis</i> (7 records)	Wildlife and Countryside Act (1981 as amended) Schedule 5; NERC Act (2006) Section 41; UK BAP Priority;	1.2km east	04/06/2013
Grass snake <i>Natrix helvetica</i> (5 records)	Wildlife and Countryside Act (1981 as amended) Schedule 5; NERC Act (2006) Section 41; UK BAP Priority;	400m south-east	2011
Common lizard <i>Zootoca vivipara</i> (Single record)	Wildlife and Countryside Act (1981 as amended) Schedule 5; NERC Act (2006) Section 41; UK BAP Priority;	1.8km east	2010
Hedgehog (4 records)	NERC Act (2006)	35m west	05/10/2017
Daubenton's bat <i>Myotis daubentonii</i> (up to 4 records)	Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	1.7km north-west	11/03/2016
Common pipistrelle <i>Pipistrellus pipistrellus</i> (up to 57 records)	Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	500m west	04/07/2013
Nathusius pipistrelle <i>Pipistrellus nathusii</i> Up to 10 records)	Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	1.6km west	28/09/2017
Soprano pipistrelle <i>Pipistrellus pygmaeus</i> (up to 25 records)	Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5; and BAP Priority	180m east	01/09/2012
Brown Long-eared Bat <i>Plecotus auratus</i> (up to 9 records)	Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5; and BAP Priority	600m north-west	22/09/2018

² Note that the summary of bat records received were within 5km of the site and bat and bird data from dates earlier than 10 years, and as such, the number of records within 2km and 10 years is likely to be lower than represented here.

Turtle Dove <i>Streptopelia turtur</i> (up to 13 records)	NERC Act (2006) Section 41 Red List BoCC	Within 2km	07/05/2015
Barn owl <i>Tyto alba</i> (up to 7 records)	Wildlife and Countryside Act (1981 as amended) Schedule 1	Within 2km	18/07/2011
House sparrow <i>Passer domesticus</i> (up to 109 records)	NERC Act (2006) Section 41 Red List BoCC	Within 2km	31/12/2017
Dunnock <i>Prunella modularis</i> (up to 62 records)	NERC Act (2006) Section 41 Amber List BoCC	Within 2km	08/02/2017
Song thrush <i>Turdus philomelos</i> (up to 30 records)	NERC Act (2006) Section 41 Red List BoCC	Within 2km	07/02/2016
Mistle thrush <i>Turdus viscivorus</i> (up to 26 records)	Red List BoCC	Within 2km	22/03/2012
Starling <i>Sturnus vulgaris</i> (up to 111 records)	NERC Act (2006) Section 41 Red List BoCC	Within 2km	23/11/2017

Phase 1 Habitat Survey

Overview

3.8 The site was made up two distinct areas. Located in the north of the site, the smallest area comprised a strip of the garden of 37 Highfield Road, together with a grassy track to the east of this property which provides access from Highfield Road into the main body of the site, which was made up of horse-grazed fields bordered by scrub. Three small stable buildings were located along the eastern boundary of the site, and, an area of mature hawthorn scrub was present within the south-east of the site

Scrub

3.9 The south-eastern corner of the site was dominated by mature hawthorn scrub, with occasional elder, and, abundant common nettle in the ground layer. Linear scrub along the site boundaries was dominated by bramble and hawthorn, with occasional blackthorn, dog rose, and, elm. Nettles were frequent in the ground layer along with occasional creeping thistle, cleavers, wood dock, black horehound, and ivy.

Introduced shrub

3.10 Small areas of introduced shrub were present within the north of the site. Species included californian lilac, firethorn, and, cherry laurel.

Amenity grassland

- 3.11 Amenity grassland was present within the strip of garden to the east of 37 Highfield Road. The grassland was regularly mown, maintaining a low sward height. The amenity grassland was dominated by perennial rye grass, with occasionally cock's-foot and annual meadow grass. Herbaceous species included occasional ribwort plantain, common mouse-ear and cat's-ear.

Species-poor semi-improved neutral grassland

- 3.12 Much of the site comprised species-poor semi-improved grassland, that had been heavily grazed by horses to a short sward height. This was dominated by Yorkshire fog, with frequent rough meadowgrass, and, perennial ryegrass, and occasional soft brome, cock's-foot and annual meadowgrass. Flowering species included occasional daisy, white clover, and, creeping buttercup.

Scattered trees

- 3.13 Numerous mature and semi-mature scattered trees were present throughout the site. These included horse chestnut, silver birch, ash, pedunculate oak, and, sycamore.

Buildings and hardstanding

- 3.14 All buildings on site were small single-storey stable structures, with a timber frame clad in corrugated steel panels.

Protected Species*Bats**Buildings*

- 3.15 All buildings on site were considered unsuitable to support roosting bats owing to a lack of potential roosting features.

Trees

- 3.16 None of the trees on site displayed features of value to roosting bats.

Foraging and commuting

- 3.17 The mature scrub and linear scrub boundaries on site were suitable to support commuting and foraging bats, and were well connected to a network of commuting and foraging habitats in the wider area.

Badgers

- 3.18 Whilst no setts or other evidence of badger was recorded on site, the site provides suitable foraging habitat for badgers in the local area.

Hazel Dormice

- 3.19 The scrub habitat is species poor and limited in extent within the site boundaries. However, the dense scrub boundaries, and, mature hawthorn scrub in the south east of the site are connected to a network of scrub in the wider surrounding area.
- 3.20 However, no records of dormouse were provided by the data search and, no large or ancient or lowland deciduous woodlands are present in the wider surrounding area. As such, the site is considered to have low potential to support dormice.

Great Crested Newts (GCN)

- 3.21 No ponds were recorded on site or within 250m of the site. The closest pond is located 475m to the south-east and had a peak count of three GCN in 2018, and, the next closest pond, 540m to the south-east had a peak count of 17 GCN (The Ecology Partnership, 2018). These ponds are both surrounded by sufficient terrestrial habitat, and GCN are unlikely to migrate long distances from these ponds. However, the scrub habitat along the edges of the site are linked to the habitat surrounding the GCN ponds and provides some landscape connectivity.

Reptiles

- 3.22 Most of the site is unsuitable to support reptiles, as the ground layer of the mature scrub was heavily shaded and grassland managed to a short sward. The scrub edge habitat is species poor, and does not support tussock edge habitats, with the scrub dense and shaded in areas. Furthermore, there are records of reptiles in the wider surrounding area. As such, the site is considered to have low potential for reptiles.

Birds

- 3.23 The trees, and scrub on site provide suitable nesting habitat for birds.

Other Species

- 3.24 Scrub on site is suitable to support hedgehog.
- 3.25 Owing to a lack of suitable habitat, no potential for any other protected species, such as otters and water voles, was identified within the site.

4.0 Discussion

4.1 The following paragraphs consider the effects of the development on designated sites, priority habitats and protected and priority species. Where the desk study and Phase 1 survey provide sufficient evidence for an assessment of effects on any of these groups to be taken through planning, these are detailed below, the need for additional surveys and when and how these should be completed are summarised, if required.

Effects on statutory designated sites

4.2 The site itself is not designated for its nature conservation value, however, the site lies within the zone of influence of the following:

The Swale (SPA) and Ramsar site, approximately 1.6km south;

Medway Estuary & Marshes Special Protection Area (SPA) and Ramsar site, approximately 1.7km south;

Thames Estuary & Marshes SPA and Ramsar, approximately 4.7km north-west;

Foulness SPA and Ramsar, approximately 9.4km north;

Benfleet and Southend Marshes SPA and Ramsar, approximately 9.7km north.

4.3 For the SPA and Ramsar, the Conservation of Habitats and Species Regulations 2017, requires;

“63. — (1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of that site,

must make an appropriate assessment of the implications of the plan or project for that site in view of that site’s conservation objectives”.

4.4 The conservation objectives for nearest SPAs, The Swale and the Medway Estuary and Marshes, are, for the natural habitats and species for which the site has been designated (the ‘Qualifying Features’), and subject to natural change, to ensure that

the integrity of the site is maintained or restored as appropriate, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying species
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of qualifying species rely
- The populations of qualifying features, and,
- The distribution of qualifying species within the site.

4.5 Farmland near to a European Site can be functionally linked (Chapman & Tyldesley 2016) to the European Site if it supports a significant proportion of the population of one or more of the bird species for which the European Site was classified, for examples as foraging habitat. Such land is included within the conservation objectives, effectively giving it the same tests ((a) and (b) of Regulation 63 above) as if the habitats were within the European Site.

4.6 The site, approximately *c.* 1.5ha and is considered to be relatively small in terms of the wider landscape and does not support habitat for which would the qualifying species would utilise. Considering the small scale of the area, the lack of suitable habitats and the use of the site (including residential use), it is considered that this area of habitat within the redline boundary would not be functionally linked land.

4.7 As such, it is considered that this site should be screened out at test (a) of Regulation 63 and so not needing appropriate assessment.

4.8 However, it is considered that any development would have to support SAMSS payments are per local policy.

4.9 The proposed development falls within the impact risk zone (IRZ) of Sheppey Cliffs and Foreshore SSSI. This particular IRZ recommends that Natural England is consulted with regards any development resulting in a net-gain in 10 or more residential units. Due to the distance, no direct impacts are anticipated but indirect impacts such as increased recreational pressure must be considered. The level of impact cannot be quantified until the extent of proposals is known.

4.10 However, it is recommended that open space provision, linkages to public footpaths, and ecological enhancements are recommended as part of the development proposals.

- 4.11 The proposed development is located within 2km of other designated sites. However, due to the distance, no direct impacts are anticipated but indirect impacts such as increased recreational pressure must be considered.

Effect on offsite ancient woodland/priority habitats

- 4.12 Government guidance³ requires avoidance of damage to ancient woodland, with at the least a 15m buffer to avoid physical damage to trees and more, plus other mitigation, if other negative effects such as recreational damage or air pollution are likely. Ancient semi-natural woodland is located within the wider landscape. However, all units of this habitat are well over 15m from the red line boundary. As such, no direct impact are anticipated.

- 4.13 Lowland deciduous woodland is present to the west of the site as defined on online mapping. It is recommended that these are suitably buffered from the development and landscape enhancements to provide increased connectivity across the site and landscape is recommended.

Effect on on-site habitats

- 4.14 Online mapping tools, identified that a portion of the site was broadleaved natural woodland. However, the site assessment identified that this area as scrub habitat, dominated by hawthorn with elder present. As such this is not priority habitat. Whilst this is not a priority habitat, such areas can provide some important habitat for local species, including nesting birds.
- 4.15 The remainder of the site supports habitats which are common and widespread. The grassland is species and structurally poor. These habitats are not considered beyond site level and their loss would not be considered significant.
- 4.16 In line with National Planning Policy, any proposed scheme will need to demonstrate a biodiversity net-gain. It is recommended a detailed mitigation and enhancement strategy be produced to detail the measures to be implemented into the masterplan to ensure biodiversity net-gain on site.

³ <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>

Protected Species

Bats

- 4.17 The buildings and trees on site were considered to have negligible bat roosting potential due to lack of bat roost potential features, and, no further surveys are required.
- 4.18 The site was generally considered to be of 'low' habitat suitability for foraging and commuting bats, owing to the dominance of species-poor grassland, and the suburban nature of the site. However, the edges of the site, the scrub linear features, are well connected to other such features within the wider landscape. As such the site is likely to provide some local interest for bats, notably on the edges of the site.
- 4.19 The Bat Conservation Trust survey guidelines (Collins, 2016) state in table 4.1 that the "guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, are to be applied using professional judgement". It is important that proportionality is employed when recommending further survey work for bat species on a proposed development site. As stated within section 8.2.7 of these guidelines (Collins 2016), the following points need to be considered with regard to planning activity surveys:
- Likelihood of bats being present;
 - Likely species concerned;
 - Number of individuals;
 - Type of habitat affected;
 - Predicted impacts of the proposed development on bats;
 - Type and scale of proposed development.
- 4.20 As the scheme aims to retain and enhance the habitats at the south of the site and edge habitats will be largely retained, activity surveys are not considered. However, any proposed lighting scheme as part of the development will have to take into account bats in the surrounding area, as well as on site.
- 4.21 All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels which can affect both their roosting behaviour as well as their foraging behaviour. This needs to be taken into

account, with a sympathetic lighting scheme for the development, avoiding use of street lighting and only installing lighting if there is a significant need.

4.22 Any necessary lighting should adhere to the following recommendations:

- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component;
- Directing light to where it is needed and avoiding light spillage;
- Using baffled lighting where light is directed towards the ground;
- Avoid putting lighting near tree lines or hedgerows and angling light away from these linear features which are used by commuting and foraging bats;
- Planting a barrier within the scheme to form a barrier.

Dormice

4.23 The scrub habitats are species poor and limited in extent and there are no woodland habitats or extensive hedgerow networks and woodland pockets within the landscape. There are no records for dormice within 2km of the site, with the wider landscape more dominated by open arable habitats, suboptimal for dormice.

4.24 As such it is considered unlikely that dormice are present on site and no further survey work would be recommended. However, it is recommended that edge habitats are retained and enhanced where possible, to maintain landscape connectivity to other species which may be present within the local area.

Badgers

4.25 No evidence of badgers being present on site was recorded and no further surveys are recommended. Any design for the site should consider the retention of edge habitats within any proposals would ensure that if badgers are present in the local area that they would be able to move across the site and into the wider landscape.

Reptiles

4.26 The majority of the site is not considered to be suitable for reptiles. Amenity grassland habitat on site was considered unsuitable to support reptile due to low sward height, and the grazed species poor grassland, was also considered unsuitable. However, if

left unmanaged it could attract reptiles into the site. The scrub edges did not support tussocks and were dense, but could offer some habitat for reptiles.

4.27 Any development proposals would have to consider reptile populations present within the redline boundary. As the majority of the site is unsuitable for reptiles and adjacent habitats outside the site boundary are suitable it is considered that a full reptile presence/likely absence survey is not necessary in this instance.

4.28 However, it is recommended that edges of the site, are retained where possible. Furthermore, it is recommended that the grassland habitats are managed at a short sward height to ensure the site does not become suitable for reptile species.

Great Crested Newts

4.29 The majority of the site is considered to be sub optimal in terms of GCN terrestrial habitat, with the grassland being species poor and of short sward height. Whilst GCNs are present within the local landscape, and there is some connectivity, the loss of over 1ha of land, at this distance from known GCN populations would not result in an offence being committed (see figure 7 below).

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	1 - 5 ha lost or damaged	0.04
Individual great crested newts	No effect	0
	Maximum:	0.04
Rapid risk assessment result:		GREEN: OFFENCE HIGHLY UNLIKELY

Guidance on risk assessment result categories

"Green: offence highly unlikely" indicates that the development activities are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed. Therefore, no licence would be required. However, bearing in mind that this is a generic assessment, you should carefully examine your specific plans to ensure this is a sound conclusion, and take precautions (see **Non-licensed avoidance measures tool**) to avoid offences if appropriate. It is likely that any residual offences would have negligible impact on conservation status, and enforcement of such breaches is unlikely to be in the public interest.

Figure 7: Natural England Licence risk assessment – Green offence highly unlikely

4.30 As such it is not considered that any further surveys would be required and that any development would not result in impacts on the favourable conservation status of GCNs in the local area.

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- 4.31 It is always recommended that the scrub edges are retained and enhanced to maintain landscape connectivity for a range of species, including common amphibians which may be present in the wider landscape.

Birds

- 4.32 All of trees and, shrubs on site have potential to support breeding birds. The UK breeding season for most bird species takes place between March and September. It is therefore recommended that any clearance of suitable vegetation on site be carried out outside of this period. If this is not possible, it is recommended that areas of suitable vegetation are checked by an ecologist for active nests, no more than 48 hours prior to clearance. Should active nests be identified, works must cease in the vicinity of the nest until the birds have fledged the nest.
- 4.33 Bird boxes can be hung on mature trees to increase the number of breeding opportunities throughout the site. Woodcrete (or similar) boxes are recommended as they provide better thermal properties, are longer lasting and more durable than wooden boxes. These should be positioned at least 2.5m from ground level, on retained mature trees on site.

Other species

- 4.34 Given the lack of suitable habitat on site for otters and water voles, the development is not considered to be constrained by these species and no further surveys are deemed necessary.

Ecological Enhancements

- 4.35 The site is currently considered to support habitats of ecological value, it is therefore important that significant considerations are given in the masterplan towards maintaining and enhancing on-site habitat and connectivity with the wider landscape post-development, the following include some examples. It is important to utilise native species of local provenance in landscaping schemes to enhance the ecological value of a development. .
- 4.36 It is recommended that a detailed mitigation and enhancement strategy is drawn up for the site. This will include but not be limited to the following:

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- Creation of new high distinctiveness habitats such as orchard, lowland meadows, native hedgerows, treelines, and ponds, to be managed in the long term for biodiversity;
 - Installation of specialist bird and bat boxes on retained mature trees along the site boundary;
 - Creation of log piles and reptile hibernacula to provide safe refuge and hibernation sites for reptiles, amphibians, and, hedgehog; and,
 - Incorporation of small holes at the base of any proposed garden fencing to facilitate access to gardens for hedgehogs.

5.0 Impact Assessment

5.1 This section of the report forms an EcIA (Ecological Impact Assessment) and is designed to quantify and evaluate the potential impacts of the development on habitats and species present on site, or within the local area.

5.2 A full impact assessment is not possible at this stage as detailed landscaping proposals are not yet finalised for the site. However, some broad conclusions can be made from the preliminary ecological appraisal and illustrative master plan to inform an outline EcIA, as presented below.

Methodology

5.3 The approach to this assessment accords with guidance presented within the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018). In essence, an EcIA assesses the activities associated with a proposed scheme that are likely to generate changes within identified zone of influences, on identified ecological features and receptors. The proposals are subsequently reviewed and mitigation and compensation measures are outlined which help to reduce negative impacts.

5.4 The zone of influence for the development is defined as:

- The project red line, for effect on habitats and species;
- Adjacent habitat, considered by species, for mobile species with territories or foraging ranges that may overlap the site;
- Up to 2km for national statutory and non-statutory designations; and,
- Up to 10km for international statutory designations.

5.5 The types of features considered in the assessment of effects, to meet legislative and policy requirements are:

- Designated sites (European, national and local);
- Protected species;
- Habitats and species of principal importance (Section 41 list);
- Hedgerows and woodland, where not of principal importance; and
- Habitats, where not if principal importance, that may function as wildlife corridors or stepping stones.

Impact Assessment and Mitigation

5.6 Table 2 below summarises the impacts and required mitigation for each receptor as previously detailed in the discussion

Table 1: Assessment of effects from the proposal after mitigation and compensation

Feature	Scale of Importance	Mitigation/Compensation Required	Residual Effect
The Swale (SPA) and Ramsar site	International	SAMMS funding Recommendations for on site open space provision, including provisions for public footpaths	Not significant.
Medway Estuary & Marshes Special Protection Area (SPA) and Ramsar site,	International	SAMMS funding Recommendations for on site open space provision, including provisions for public footpaths	Not significant.
Thames Estuary & Marshes SPA and Ramsar,	International	SAMMS funding Recommendations for on site open space provision, including provisions for public footpaths	Not significant.
Diggs and Sheppey Court Marshes LWS	Regional	Recommendations for on site open space provision, including provisions for public footpaths	Not significant.
Minster Marshes LWS	Regional	Recommendations for on site open space provision, including provisions for public footpaths	Not significant.
Off-site priority habitat	Local	Buffering of off-site woodland to the west of the site. Maintaining connectivity to the priority habitat.	Not significant.
Bats	Local	Sensitive lighting, planting enhancements, dark buffer zones along the site boundaries, and, establishment of additional bat boxes.	Not significant.

Nesting Birds	Site	Timing works outside of breeding bird season. Where this is not possible, an ecologist will need to confirm absence of active nest prior to clearance. Establishment of additional bird boxes on site.	Not significant
Reptiles / GCNs	Site	Sensitive clearance of suitable habitat. Enhancement through installation of a log piles and new foraging habitat.	Not significant

Cumulative impacts

5.7 No significant cumulative impacts are anticipated to the SPA and Ramsar sites in the surrounding area owing to the provision of open space on site and payment into SAMMS.

6.0 Conclusions

6.1 The site is not designated for its nature conservation value and does not lie adjacent to any designated sites.

6.2 The site is located 1.6m from The Swale SPA, and 1.7km from Medway Estuary and Marshes SPA. SAMMS funding will be required as per local policy. With the SAMMS funding and provision of open space on site, no significant impacts are anticipated.

6.3 No buildings or trees present on site were considered to be suitable for roosting bats. Whilst the site had some potential for commuting/foraging bats, surveys are not considered necessary, as the layout of the scheme retains and enhances the majority of bat commuting/foraging habitat on site. However, a sensitive lighting scheme is recommended to avoid impacts on bats utilising the site post development.

6.4 The majority of the site is species poor grazed and maintained grassland, and as such considered unsuitable for species such as reptiles and GCNs and dormice. The scrub edges have some suitability, albeit limited. It is recommended that edge habitat is retained and enhanced where possible.

6.5 No evidence of badgers using the site was found. The site is not considered to be constrained by badgers.

6.6 The site did not support features which could be utilised by ground nesting birds such as skylark, and none were recorded on site during the survey period. The scrub edges

are considered to have suitability for nesting birds. Sensitive clearance outside nesting season is recommended.

- 6.7 A number of general site mitigation and enhancement measures are also recommended, these include creation and long-term management of new high distinctiveness habitats, instillation of bird nesting boxes, bat roosting boxes, reptile hibernacula, as well as incorporating holes in fences for hedgehog. A detailed ecological mitigation and enhancement strategy is recommended to establish how these enhancements would be incorporated into the design of the scheme.
- 6.8 The development will not result in negative effects on features of conservation interest, with the development constrained largely to species poor grassland and scrub habitat.
- 6.9 The site is not considered to be functionally linked land and as such an AA is unlikely to be required. However, it is for the LPA, the competent authority to determine if an AA is required.

7.0 References

ARG (2010) *UK Advice Note 5: Great crested newt habitat suitability index*. Amphibian and Reptile Groups of the United Kingdom.

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

CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). Bat Conservation Trust, London.

Creswell, P., Harris, S. & Jeffries, D.J. (1990) *The history, distribution status and habitat requirements of the badger in Britain*. Nature Conservancy Council, Peterborough.

English Nature (2004) *Reptiles: guidelines for developers*. English Nature, Peterborough.

Froglife (2015) *Surveying for Reptiles*. Froglife, Peterborough.

Franklin, J. F. (1993) 'Preserving Biodiversity: Species, Ecosystems, or Landscapes?', *Ecological Applications*, 3: 202-205.

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey – a techniques for environmental audit*. JNCC, Peterborough.

Institution of Lighting Professionals (ILP – 2018) *Guidance Note 08/18 – Bats and artificial lighting in the UK*. ILP, Rugby.

Langton, T.E.S., Beckett, C.L. & Foster, J.P. (2001) *Great Crested Newt Handbook*. Froglife, Halesworth.

Jehle, Robert. (2000) 'The terrestrial summer habitat of radio-tracked great crested newts (*Triturus cristatus*) and marbled newts (*T. marmoratus*)', *Herpetological Journal*. 10. 137-142.

Jehle, R. and Arntzen, J.W. (2000) 'Post-breeding migrations of newts (*Triturus cristatus* and *T. marmoratus*) with contrasting ecological requirements', *Journal of Zoology*, 251: 297-306.

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

Natural England (2011) *Badgers and Development: A guide to best practice and licensing*. Natural England, Bristol.

Neal, E. & Cheeseman, C. (1996) *Badgers*. T & A D Poyser Ltd. London.

Oldham, R. S. & Nicholson, M. (1986) 'Status and ecology of the warty newt (*Triturus cristatus*)', *Chief Scientist Directorate Report No. 703*. Peterborough: Nature Conservancy Council.

Stone, E.L., Jones, G., Harris, S. (2009) Street lighting disturbs commuting bats. *Current Biology*, 19: 1123-1127.

Stratchan, R., Moorhouse, T., & Gelling, M. (2011) *Water Vole Conservation Handbook*. 3rd Edn. Wildlife Conservation Research Unit, University of Oxford.

Wilson, G.J., Harris, S. & McLaren, G. (1997) *Changes in British badger population, 1988-1997*. People's Trust for Endangered Species, London.

Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Habitat Map

Figure 1. Phase 1 habitat survey map



Appendix 2: Photos

Photograph 1: Species-poor semi-improved grassland and boundary scrub in the south-west of the site, looking west.



Photograph 2: Species-poor semi-improved grassland and boundary scrub in the centre of the site, looking north.



Photograph 3: Mature hawthorn scrub in the south-east of the site.



Photograph 4: Species-poor semi-improved grassland, B4, and scattered trees in the centre of the site, looking north.



Photograph 5: Interior of B4



Photograph 6: B2 and B3 in the north-east of the site



Photograph 7: Interior of B3.



Appendix 3: Species List

Species list		
Common name	Latin name	DAFOR score ⁴
Species-poor semi-improved grassland		
Yorkshire fog	<i>Holcus lanatus</i>	D
Rough-meadow grass	<i>Poa trivialis</i>	F
Perennial rye grass	<i>Lolium perenne</i>	F
Soft brome	<i>Bromus hordeaceus</i>	O
Daisy	<i>Bellis perennis</i>	O
White clover	<i>Trifolium repens</i>	O
Creeping buttercup	<i>Ranunculus repens</i>	O
Cock's-foot	<i>Holcus lanatus</i>	O
Annual meadow-grass	<i>Poa annua</i>	O
Bird's-foot trefoil	<i>Lotus corniculatus</i>	R
Prickly sow thistle	<i>Sonchus asper</i>	R
Wild carrot	<i>Daucus carota</i>	R
Ribwort plantain	<i>Plantago lanceolata</i>	R
Teasel	<i>Dipsacus fullonum</i>	R
Greater plantain	<i>Plantago major</i>	R
False-oat grass	<i>Arrhenatherum elatius</i>	LA
Amenity grassland		
Perennial rye grass	<i>Lolium perenne</i>	D
Cock's-foot	<i>Dactylis glomerata</i>	O
Annual Meadow grass	<i>Poa annua</i>	O
Ribwort plantain	<i>Plantago lanceolata</i>	O
Common mouse-ear	<i>Cerastium fontanum</i>	O
Cat's-ear	<i>Hypochaeris radicata</i>	O
Scattered trees		
Horse chestnut	<i>Aesculus hippocastanum</i>	R
Silver birch	<i>Betula pendula</i>	R
Ash	<i>Fraxinus excelsior</i>	R
Pedunculate oak	<i>Quercus pedunculata</i>	R
Sycamore	<i>Acer pseudoplatinus</i>	R
Eucalyptus	<i>Eucalyptus</i> sp.	R
Lawson's cypress	<i>Chamaecyparis lawsoniana</i>	R
Fig	<i>Ficus carica</i>	R
Atlas cedar	<i>Cedrus atlantica</i>	R
Scrub		
Bramble	<i>Rubus fruticosus</i>	D
Hawthorn	<i>Crataegus monogyna</i>	D
Common nettle	<i>Urtica dioica</i>	A
Blackthorn	<i>Prunus spinosa</i>	O
Elm	<i>Ulmus</i> sp.	O
Elder	<i>Sambucus nigra</i>	O
Creeping thistle	<i>Cirsium arvense</i>	O
Cleavers	<i>Galium aparine</i>	O
Wood dock	<i>Rumex sanguinea</i>	O

⁴ D=Dominant; A=Abundant; F=Frequent; O=Occasional' R= Rare occurrence

Black horehound	<i>Ballota nigra</i>	O
Ivy	<i>Hedera helix</i>	O
Alexanders	<i>Smyrniium olusatrum</i>	R
Wild cherry	<i>Prunus avium</i>	R
Spear thistle	<i>Cirsium vulgare</i>	R
Dog rose	<i>Rosa canina</i>	R
Stone parsley	<i>Sison amomum</i>	R
<i>Introduced shrub</i>		
Cherry laurel	<i>Prunus laurocerasus</i>	O
Pendulous sedge	<i>Carex pendula</i>	R
Red valerian	<i>Centranthus rubra</i>	R
Firethorn	<i>Pyracantha</i> sp.	R
Rose	<i>Rosa</i> sp.	R
Californian lilac	<i>Ceanothus</i> sp.	R

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