
Preliminary Ecological Appraisal

Hollowdene Farm, Needham

for

Mr Rhys Thomas

21 June 2022



Client

Mr Rhys Thomas

Planning authority

South Norfolk District Council

Time limit of reliance

Please note that the reported surveys were conducted on the date(s) stated in the report and that it represents site conditions at the time of the visit. The findings and recommended mitigation are based on these conditions. If site conditions change materially after the site survey, the original report cannot be relied upon and will need to be updated. Ecological reports and surveys can typically be relied on for 18 to 24 months from the date of survey.

Surveys supporting European Protected Species Mitigation Licence applications must be within the current or most recent survey season for bats (May to September), or within two survey seasons for great crested newts (March to June).


Document	Preliminary Ecological Appraisal
Version	1.0
Date	21 June 2022
Reference number	2801
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<i>Signed disclosure</i>	
<i>The information, data, advice and opinions provided in this report which I have provided is true and has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. I confirm that the opinions expressed are my true and professional bona fide opinions.</i>	
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SUMMARY

- Greenlight Environmental Consultancy Ltd. has been commissioned to carry out a Preliminary Ecological Appraisal for a proposed development at Hollowdene Farm, 149 High Road, Needham, Harleston, IP20 9LG (grid reference: TM 22291 80605).
- This report outlines the habitat features on site, the likelihood of protected species being present and any potential effects of the proposed development on such species.
- The ecology report is required in support of a planning application for the conversion and extension of an existing structure, and demolition of a garage block.
- The survey and assessment were completed by independent, qualified and experienced ecologists with Natural England survey licences for the relevant protected species.
- The findings of the assessment are that the habitats on the site are of **low** ecological value and that there are no significant ecological constraints that would prevent the proposed works.
- **Further surveys for bats are required prior to works commencing to inform an ecological impact assessment of the site and an appropriate mitigation strategy.**
- If the following mitigation and enhancements are incorporated into the proposed layout, there will be a net gain for biodiversity, as is encouraged by the National Planning Policy Framework.

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
Protected sites	No statutory and five non-statutory protected sites within 2km.	No significant impacts on protected sites and their qualifying features.	None required.
Protected habitats and habitats subject to conservation designations	Artificial unsealed, unvegetated surface, other developed land and hedgerow on site. No Priority Habitats will be affected.	Low scale of habitat loss predicted for wildlife.	<u>Mitigation</u> Soft landscaping scheme to include the planting of new native species-rich hedgerows and trees between plots and around the site. Construction work to be carried out in accordance with BSI (2012), BS 5837:2012, to protect trees and their root protection areas. Construction work is carried out in accordance with BS (2013), BS 42020:2013, Biodiversity – Code of Practice, to protect waterways from runoff and pollution.
Bats	Low bat roosting potential in building one. Negligible bat roosting potential in building two.	Potential disturbance of bat roosts if present in buildings. Low scale loss and potential light disturbance of commuting and	<u>Further surveys required</u> At least one activity survey to be undertaken on building one between May and August. The outcome of the surveys will inform a detailed mitigation strategy and

Protected habitats/species	Status	Potential effect	Recommended mitigation and enhancements
	Low value commuting and foraging habitat on site.	foraging habitats on site.	whether an EPS Mitigation Licence will be required from Natural England. <u>Mitigation</u> Any lighting schemes will comply with Bat Conservation Trust and CIE 150:2003 guidance.
Breeding birds	Nesting habitats for hedgerow, tree and building nesting birds present on site, including potential breeding habitat for Red and Amber listed species. No suitable barn owl foraging habitat on site.	Low scale loss of nesting habitat on site. Potential disturbance to breeding birds.	<u>Mitigation</u> Works to any hedgerows, trees and buildings on site to be conducted outside bird nesting season or under watching brief of ecologist if during nesting season. <u>Enhancement</u> Installation of one integrated swift box and three small bird boxes on site.
Great crested newts	Unsuitable terrestrial habitats on site. One pond within 250m of the site, assessed as below average habitat suitability for GCN. No GCN records within 2km.	GCN unlikely to be found on site and no impacts predicted.	<u>Precautionary mitigation</u> Cut and maintain vegetation short (maximum height of 10cm) on and around the site until the start of works.
Water voles and otters	Unsuitable habitats on site. Suitable habitat adjacent the site. 24 water vole and three otter records within 2km.	Water voles and otters unlikely to be found on site and no impacts predicted.	None required.
Reptiles	Habitats on site unsuitable. No reptile records within 2km.	Reptiles unlikely to be found on site due to small quantities of suitable habitats present. No impacts predicted.	<u>Precautionary mitigation</u> Cut and maintain vegetation short (maximum height of 10cm) on and around the site until the start of works.
Other animals	N/A	Potential harm to animals.	<u>Mitigation</u> Porous hedgehog friendly fencing will be used within and around the site. Rough sawn planks placed inside any open excavations. Night lighting of the construction site will be minimised as far as possible. Construction materials will be stored off the ground on pallets and waste materials in skips.

1. METHOD

- 1.1. A walkover of the site was conducted on 8th June 2022 by Lucy Reed and Matthew Ashley – independent, qualified and experienced ecologists. Survey conditions were as follows: 17°C, 11mph wind, sunny intervals and dry.
- 1.2. All survey methods were carried out in accordance with the most up to date good practice guidance for the relevant protected species. Please refer to Appendix A for the full methodology and species breakdown.
- 1.3. The habitats on and directly adjacent the site were considered unsuitable for the following protected species, with no evidence or signs of use observed. No further surveys or mitigation for these species are detailed in this report:
 - White-clawed crayfish *Austropotamobius pallipes*
 - Badger *Meles meles* (setts)
 - Hazel dormouse *Muscardinus avellanarius*
 - Natterjack toad *Epidalea calamita*

2. SITE CONTEXT

Location

- 2.1. The general location of the site is shown in Figure 1 below.
- 2.2. The site is situated on the southern edge of the village of Needham, with the A143 located approximately 0.5km to the north. The closest town is Hareston, which is located approximately 2.8km northeast of the site.
- 2.3. The site is enclosed by a road and arable fields to the northwest, residential dwellings to the east and coastal and floodplain grazing marsh to the south. The wider surroundings are comprised predominantly of arable fields lined with mature trees and hedgerows.



Figure 1

Satellite image of site surroundings, site indicated by red line.

Image © Google, date accessed 15/06/22

3. DESCRIPTION OF THE DEVELOPMENT

- 3.1. The proposals are for the conversion and extension of an existing structure, and the demolition of a garage block.

4. PROTECTED SITES

Statutory

- 4.1. There are no statutory protected sites located within 2km of the proposed development.
- 4.2. The proposed development falls outside of all Sites of Special Scientific Interest (“SSSI”) Impact Risk Zones relating to rural residential developments.

Non-statutory

- 4.3. There are seven non-statutory protected sites located within 2km – seven County Wildlife Sites (“CWS”). Please refer to Appendix C for the full citations.

- i. River Waveney CWS, 0.3km southeast.

“The river Waveney forms the County boundary between Suffolk and Norfolk as it flows through the Mid Suffolk District from Diss in the west towards Bungay in the east. Many stretches of the River Waveney are of conservation value, however five sections have been selected as being of particular importance for aquatic wildlife. These sections are colonised by a species-rich aquatic flora.”

- ii. Weybread marshes CWS, approximately 0.4km south.

“This site comprises a number of small floodplain grazing marshes (Priority habitat) adjoining the River Waveney. These cattle-grazed marshes have not been treated with agricultural chemicals and therefore support a species-rich wetland plant community. In addition to a range of fairly common plants the site also supports a number of uncommon species such as ragged-Robin and early marsh orchid.”

- iii. Furze Covert CWS, approximately 1.4km northwest.

“This wood has been extensively used for recreation and contains the remnants of banks, trenches and toilets. There is a large open area in the centre of the site which contains a sizeable pond. The edges of the site are a typical semi-natural woodland.”

- iv. Brockdish Common and adjacent grassland CWS, approximately 1.4km southwest.

“The whole site is comprised of two distinct areas of land. The first is an area formally known as ‘Adj. River Waveney’ which was designated a CWS in 1983 and last surveyed in 1985 and

which borders the southern boundary of Brockdish Common. The second is Brockdish Common which is registered common land and was surveyed in 2016 and which forms an extension to 'Adj. River Waveney'."

- v. St. Peter's Meadow CWS, 1.5km northeast.

*"This site consists of two adjacent fields separated and surrounded by hedges. The northern field (Oliver's Meadow) is grazed by geese whilst the southern (St Peter's) is ungrazed but cut for silage. The site slopes gently downwards to the east and contains wall barley (*Hordeum marinum*) and corn parsley (*Petroselinum segetum*), both scarce in Norfolk."*

- vi. Oliver's & Dodd's Woods CWS, approximately 1.9km northwest.

*"This is an area of ancient woodland consisting mainly of neglected hornbeam *Carpinus betulus* coppice with oak *Quercus robur* or ash *Fraxinus excelsior*. The southern block of woodland is mainly overgrown hornbeam coppice and some single-stemmed hornbeams, with oak standards of about 100 years old."*

- vii. Whitepost Lane Wood CWS, approximately 2km northwest.

"This is an area of broadleaved woodland over clay soils. The site is divided into two square blocks and is surrounded by ditches, with another ditch bisecting the site from east-west. CWS 75 Oliver's and Dodd's Woods stands one field away, to the east."

5. HABITATS

Desktop review

- 5.1. Priority Habitats to occur within 2km (identified using MAGIC – managed by Natural England), include Coastal and Floodplain Grazing Marsh, Good Quality Semi-Improved Grassland, Deciduous Woodland, Traditional Orchards and Wood pasture and Parkland BAP Priority Habitat. The closest of which, is Coastal and Floodplain Grazing Marsh located directly adjacent to the southern boundary.

Field study

- 5.2. The habitats on the site are of **low** ecological value, consisting mainly of artificial unvegetated, unsealed surface, other developed land (hardstanding), with encroaching ruderal vegetation and hedgerows (Priority Habitat) on the site peripheries.
- 5.3. Priority Habitats, as listed under the NERC Act 2006 Section 41 Habitats of Principal Importance found on site include: Hedgerows.
- 5.4. Figure 2 provides a map of the habitats present on the site. NERC Act 2006 Section 41 habitats have been identified where relevant. A full list of plant species recorded on site is attached in Appendix E.

Hedgerow (UK Habitat Classification h2a, secondary code: native 47) – Priority Habitat

- 5.5. The site features two species-rich, predominantly native, hedgerows which are actively managed along the southern and eastern boundaries. Hedgerow species include: hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, field maple *Acer campestre*, holly *Ilex aquifolium*, bramble *Rubus fruticosus* and cherry sp. *Prunus sp.*
- 5.6. This hedgerow does not qualify as “important” under The Hedgerow Regulations 1997, lacking the required number of native woody species.

Buildings (UK Habitat Classification u1b5)

- 5.7. There are two buildings on site, an outbuilding that was previously used as horse stables but is now used for storage, and a garage. Please refer to the bat section detailed below for further information.

Artificial unvegetated, unsealed surface (UK Habitat Classification u1c, Secondary code: ruderal/ephemeral 17).

- 5.8. The site features a gravel driveway and other areas of gravel with encroaching ruderal vegetation. Species include: perennial ryegrass *Lolium perenne*, dove's-foot cranesbill *Geranium molle*, nettle *Urtica dioica*, garlic mustard *Alliaria petiolata*, mouse-ear-hawkweed *Hieracium pilosella*, forget-me-not *Myosotis sp.*, foxglove *Digitalis purpurea*, honeysuckle *Lonicera sp.*, buddleia *Buddleja davidii*, oxeye daisy *Leucanthemum vulgare*, herb-robert *Geranium robertianum*, elder *Sambucus nigra*, dotted loosestrife *Lysimachia punctata*, cleavers *Galium aparine*, ground-ivy *Glechoma hederacea*, dame's rocket *Hesperis matronalis*, prickly sow thistle *Sonchus asper*, tutsan *Hypericum androsaemum*, Yorkshire fog *Holcus lanatus* and red dead-nettle *Lamium purpureum*.

Other developed land (UK Habitat Classification u1b6, Secondary codes: ruderal/ephemeral 17).

- 5.9. The site features two areas of concrete hardstanding with encroaching ruderal vegetation on the southern side of both the outbuilding and garage.

Built linear features (UK Habitat Classification u1e, secondary codes: wall 68)

- 5.10. There are breeze block walls enclosing an area of hardstanding located between the two existing outbuildings.



Figure 2
Habitats on site.
Image © QGIS, date accessed 15/06/2022



Photo 1, gravel drive, hardstanding and encroaching vegetation, looking southeast.



Photo 2, hardstanding and brick wall between outbuildings, looking southwest.



Photo 3, area of hardstanding enclosed by brick wall, looking southwest.



Photo 4, area of gravel with encroaching vegetation and hedgerow behind the garage, looking northwest.



Photo 5, large area of gravel and encroaching vegetation behind garage, looking southeast.

6. PROTECTED AND NOTABLE SPECIES

Desktop review

Data search

- 6.1. The biodiversity data search within 2km of the site indicated 2,694 records from 741 species.
- 6.2. Records of note within 2km and relevant to the proposed development works are:
 - 11 barn owl *Tyto alba* records, with the most recent from 2019.
 - One skylark *Alauda arvensis* record from 2015.
 - Two swift *Apus apus* records from 2015.
 - Three otter *Lutra lutra* records, with the most recent from 2004. The closest record is located approximately 0.2km southeast of the site.
 - 24 water vole *Arvicola amphibius* records, with the most recent from 2019. The closest record is located approximately 0.2 km southeast of the site.
 - Five hedgehog *Erinaceus europaeus* records, with the most recent from 2017.
 - 365 bat records, with the most recent from 2019, including common pipistrelles *Pipistrellus pipistrellus*, soprano pipistrelles *Pipistrellus pygmaeus*, brown long-eared *Plecotus auritus*, serotines *Eptesicus serotinus*, noctules *Nyctalus noctula*, Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattereri*, barbastelles *Barbastella barbastellus*, Brandt's *Myotis brandtii* and other unidentified bat species.

Protected species licences

- 6.3. A 2km search on <http://www.magic.gov.uk/> indicated no records of granted European Protected Species ("EPS") Mitigation Licences.

Bats

6.4. There are two buildings located on site, as indicated in Figure 3 and photos 8-16.



Figure 3

Location and numbering of buildings located on site.

Image © QGIS, date accessed 15/06/22

The outbuilding - building one

- 6.5. The building is comprised of a combination of breezeblock, clay and timber weatherboarding, which is in a moderate state of repair. The weatherboarding is tightly fitted and mostly in good condition but contains several small holes, predominately on the north/northwest aspect. The roof is pitched and comprised of concrete pantiles, many of which are broken and lifted. The building features timber stable doors with timber ventilation slats above and several glass windows.
- 6.6. Internally, the roof is unlined, and broken or missing tiles let in a high level of natural light. Ivy ingress is visible, particularly at northeast end of the building. The wall to the north/northwest has been lined with bitumen felt, which creates a cavity between the felt and weatherboarding.
- 6.7. There are a couple of mortise and tenon joints present within the roof timbers, albeit these are quite exposed due to the light level within the building.

- 6.8. Although no bats were observed, two droppings, consistent in size, structure and appearance with pipistrelle *Pipistrelle sp.* bats were present on the wall beneath the bitumen felt.
- 6.9. Roosting opportunities are present between the weatherboard and bitumen on the north/northwest aspect.
- 6.10. The outbuilding is assessed as **low** summer, but **negligible** hibernation roost suitability for bats due to its location, roosting features and signs of bats. Please note, roosting opportunities are limited to the area between the weatherboard and bitumen felt, which will fluctuate in temperature.



Photo 6, building one external view showing breeze blocks, pantile roof and ivy cover, looking west.



Photo 7, external view of the weatherboarding along the north/northwest aspect of building one.



Photo 8, example of weatherboarding on the north/northwest aspect of the building leading to a cavity between the bitumen felt creating a potential roosting opportunity.



Photo 9, external view of the roof showing lifted, broken and missing pantiles.



Photo 10, internal view of the roof showing lifted and broken pan tiles with ivy ingress.



Photo 11, bitumen covering an area of weatherboarding on the inside of the north aspect.



Photo 12, bat dropping located on wall underneath bitumen.



Photo 13, example mortis and tenon joint which are exposed to high levels of natural daylight.

The garage – building two

- 6.11. Building two consists of breezeblock walls with a single pitched, corrugated asbestos roof. The building features two large timber doors on the northeast aspect and two glass windows on the south. One of the doors has a broken glass panel, which is heavily cobwebbed, and there are a small number of gaps above the windows, which on further inspection did not lead to any further cavities and were exposed.
- 6.12. Internally, the building consists of boarded MDF with no internal crevices or suitable roosting opportunities.
- 6.13. There were no signs of use by bats on the building exterior or interior and the structure provides an unsuitable roost environment, with no suitable cavities for roosting bats. The building was assessed as **negligible** (summer and hibernation) roost suitability for bats.



Photo 14, external view of the garage (building two), showing broken glass window, facing southwest.



Photo 15, interior view of building two, showing MDF boarding.

Trees

- 6.14. There were no trees on or immediately adjacent to the site that were considered to provide suitable roosting opportunities for bats.

Foraging and commuting links

- 6.15. The site itself provides **low** value foraging habitat for bats along the boundary hedgerows.
- 6.16. The landscape immediately adjacent to the site is considered **moderate-high** value for foraging and commuting bats, with linked hedgerows, marsh and ditches providing links to the wider landscape including the River Waveney, which is located approximately 190m east of the site.

Birds

- 6.17. Birds in the UK are classified into three categories of conservation importance - red, amber and green. Factors such as global threat level, population decline, breeding population decline, and contraction of breeding range are taken into account to determine classification.
- 6.18. The following bird species were observed during the site visit:

Red listed:

Greenfinch	<i>Chloris chloris</i>
House martin	<i>Delichon urbicum</i>
House sparrow	<i>Passer domesticus</i>

Amber listed:

Duncock	<i>Prunella modularis</i>
Woodpigeon	<i>Columba palumbus</i>
Wren	<i>Troglodytes troglodytes</i>

Green listed:

Buzzard	<i>Buteo buteo</i>
Chiff chaff	<i>Phylloscopus collybita</i>
Collared dove	<i>Strptopelia decaocto</i>
Great tit	<i>Parus major</i>
Robin	<i>Erithacus rubecula</i>

- 6.19. The site provides suitable nesting habitats for hedgerow, tree and building nesting species.
- 6.20. The site provides potential breeding habitat for the following Red listed species: greenfinch *Chloris chloris*, house martin *Delichon urbicum* and house sparrow *Passer domesticus*.
- 6.21. The site provides potential breeding habitat for the following Amber listed species: duncock *Prunella modularis*, woodpigeon *Columba palumbus* and wren *Troglodytes troglodytes*.

6.22. No signs of barn owl were found on the site and no foraging habitat is present onsite, but substantial habitat is present adjacent to the site over marshes.

Great crested newts

6.23. There are no ponds within the survey site and one further pond within 250m, which for the size of the development and nature of terrestrial habitat on the site, is a sufficient distance to consider for assessment (Figure 4). GCN are most likely to occupy good quality terrestrial habitat within 250m of a breeding pond (English Nature, 2001).

6.24. The terrestrial habitats on the site are considered predominantly unsuitable for GCN, consisting of other developed land (hardstanding), with suboptimal ruderal vegetation and hedgerows.

6.25. Terrestrial habitats adjacent the site include a mixture of unsuitable (residential dwellings with associated gardens and hardstanding) and suitable (unmanaged grassland/marsh and hedgerows) GCN foraging, commuting and hibernating habitats.

6.26. Pond one was assessed as **below average** suitability for GCN (Table 1).

6.27. Although a number of ditches are present within 250m of the site, these were considered unlikely to be suitable for breeding GCN as they are connected to the River Waveney and therefore are likely to contain populations of fish.

The site falls within the “Green” risk zone for GCN district level licensing, which is classified as “*containing sparsely distributed GCN and are less likely to contain important pathways of connecting habitat for this species*” (Natural England, 2021).

Pond	1
Geographic location	Zone A
	1.00
Pond surface area (m ²)	100m ²
	0.20
Desiccation rate	Never
	0.90
Water quality/ invert density	Poor
	0.33
Shoreline shade (%)	10%
	1.00
Waterfowl impacts	Absent
	1.00
Fish impacts	Minor
	0.33
Ponds within 1km	4
	0.70
Terrestrial habitat quality	Good
	1.00
Macrophyte cover (%)	10%
	0.40
HSI Score	Below average
	0.59

Table 1, HSI score for ponds within 250m of the proposed site.



Photo 16, pond one, looking east.

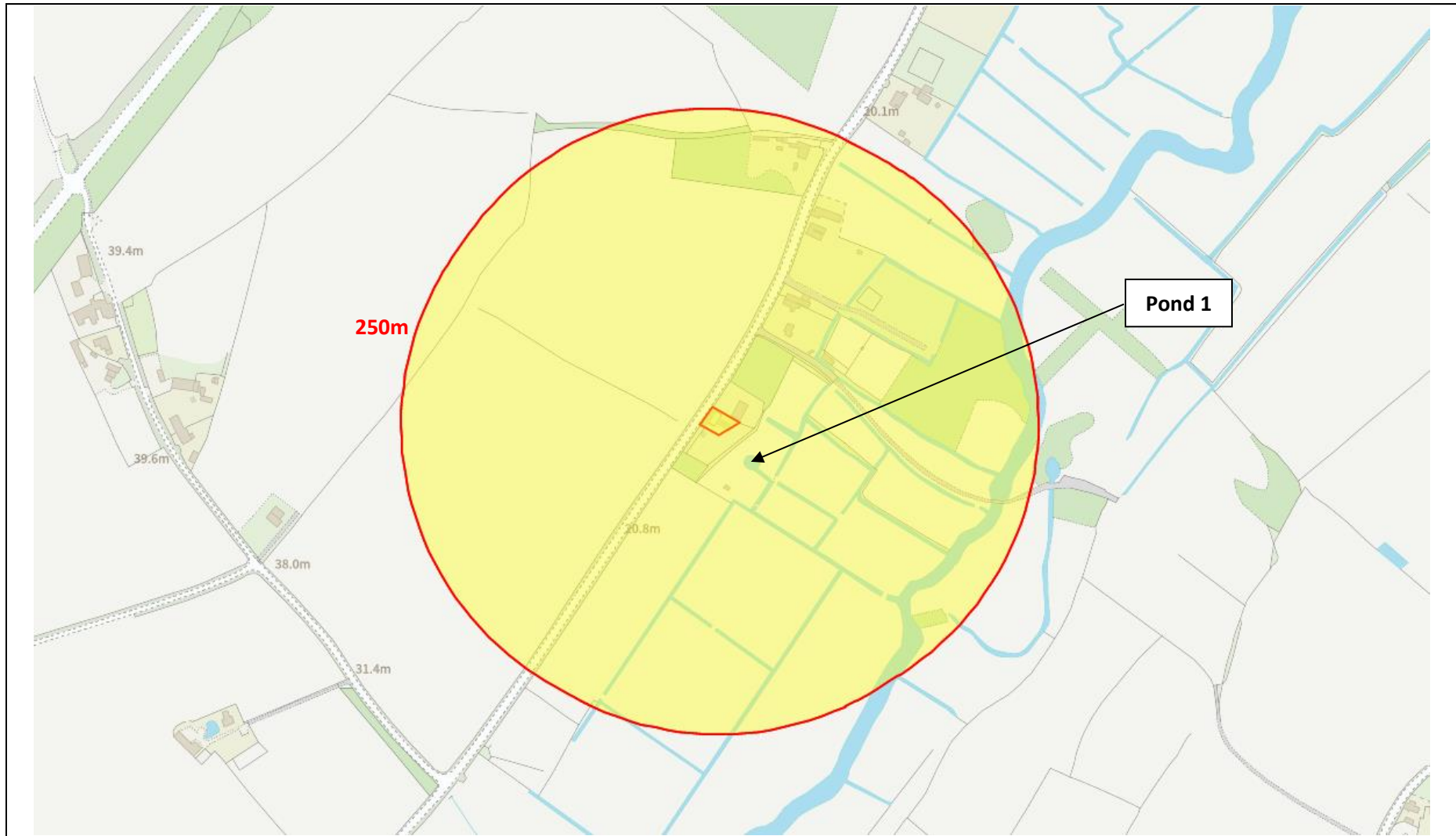


Figure 4
Ponds within 250m of the proposed site.
Image © MAGIC, date accessed 15/06/22

Water voles and otters

- 6.28. No ditches or streams are present onsite, but there are a series of ditches present within the adjacent grassland/marshes which are suitable for water voles, with moderate earth banks for burrowing and a mixture of grass, submerged weed and herbaceous plants for foraging.
- 6.29. The ditches are unlikely to be suitable for otter holts, due to the water levels and bank steepness, albeit they could use them for foraging and commuting from the nearby river.



Photo 17 wet ditch adjacent to the site providing suitable habitat for water voles, facing east.

Reptiles

- 6.30. The habitats on the site are considered predominantly unsuitable for reptiles, consisting of other developed land (hardstanding), with suboptimal encroaching ruderal vegetation and hedgerows on the boundaries.
- 6.31. Habitats immediately adjacent to the site include a mixture of unsuitable (residential dwellings with associated gardens and hardstanding) and suitable (unmanaged grassland/marsh and hedgerows) reptile foraging, commuting and hibernating habitats.

7. DISCUSSION AND CONCLUSIONS

Protected sites

- 7.1. The development footprint falls outside all identified protected sites (statutory and non-statutory). There are no statutory protected sites and five non-statutory protected CWS located within 2km of the site.
- The closest non-statutory protected site (River Waveney CWS), is located approximately 0.3km southeast of the site and designated for its wildlife habitat.
- 7.2. The proposed development falls outside of any SSSI Impact Risk Zones relating to rural residential developments.
- 7.3. The proposed development is expected to have no effects on statutory or non-statutory protected sites or their qualifying features, owing to its relatively small scale, insignificant increases in recreational pressures and limited predicted impacts beyond the area of works.

Habitats

- 7.4. The proposed works are unlikely to require the clearance of any vegetated habitats on site. Provided that the hedgerows remain intact, no priority habitats will be affected by the proposed development. The development is expected to result in a loss of nesting habitat for birds through the conversion and demolition of the buildings. Please refer to the bat section below for predicted impacts on buildings with potential bat roosts.
- 7.5. As a precautionary measure, the following mitigation will be implemented to avoid impacts on habitats from the proposed works:
- i. A soft landscaping scheme to include the planting of new native species-rich (≥ 5 species), hedgerows and trees around the site (see Appendix H for suggested species).
 - ii. Construction works carried out in accordance with British Standards Institution (2012), BS 5837:2012, Trees in relation to design, demolition and construction – recommendations, to protect trees which are to be retained and their root protection areas.
 - iii. Construction work is carried out in accordance with British Standards Institution (2013), BS 42020:2013, *Biodiversity – Code of Practice for planning and development*, to protect waterways from runoff and pollution via the implementation of a Construction Environmental Management Plan (“CEMP”).

Bats

- 7.6. The proposed works will require the conversion of building one, which has the potential to materially modify or destroy potential bat roosting locations, if present.
- 7.7. The following surveys/mitigation are required to determine if any bat species are present, the nature of their use of the building(s) and any roosting locations:
 - i. At least one bat activity survey (comprised of a dusk emergence survey) to be conducted on the outbuilding (building one) between May and August.
 - ii. If bats are found to be present and roosting within any building(s), further activity surveys and a European Protected Species Mitigation Licence may be required for the development.
 - iii. Any lighting schemes will follow guidance from the Bat Conservation Trust and CIE 150:2003. Warm-white (long wavelength) lights with UV filters will be fitted as close to the ground as possible. Lighting units will be angled below 70° and equipped with movement sensors, baffles, hoods, louvres and horizontal cut off units at 90°.
- 7.8. The outcomes of further activity surveys will inform the detailed recommended mitigation for bats. We consider that the proposed development will be able to accommodate this in the form of alternative roosting opportunities, as required.
- 7.9. Building Regulations state that the energy efficiency of buildings must be improved where possible and that contractors must assess the condensation risk within the roof space and make appropriate provisions in line with BS 5250:2011. This British Standard states that both High Resistance (bitumen type 1F) and Low Resistance (non-bitumen coated roofing membranes (NBCRM)) underlays are acceptable as long as appropriate ventilation is provided. As NBCRM are proven to entangle bats through regular contact, which also compromises the integrity of the membrane, the Bat Conservation Trust recommend only traditional type 1F bitumen is used.

Birds

- 7.10. The proposed works are expected to result in a low scale loss of bird nesting habitat through the conversion and demolition of buildings on site.
- 7.11. Any works affecting bird nesting habitat such as management of hedgerows, trees or buildings would ideally need to be conducted outside the main nesting season, which lasts from March to August. If work is planned during the bird nesting season, then a precautionary check of all habitats will be conducted by a qualified ecologist immediately prior to starting any work. If any nesting birds are found, an appropriate protection zone from the nest will be required and will be maintained until the young have fledged.
- 7.12. As enhancements, the following will be implemented:

- i. One integrated swift box (Schwegler Brick Nest Box Type 25 – Appendix F).
 - ii. Three small bird boxes (Schwegler 1B or 2H Nest Box – Appendix F).
- 7.13. Natural England and Local Planning Authorities (“LPA”) have recognised a significant decline in swift populations across the country and are actively endorsing integrated swift boxes to provide a net gain in biodiversity, as is encouraged by NPPF 2021.

Great crested newts

- 7.14. The proposed works are not expected to result in the loss of terrestrial habitats with works limited to areas of buildings and hardstanding.
- 7.15. GCN are most likely to use suitable terrestrial habitat within only 250m of a breeding pond (English Nature, 2001) and we consider it highly unlikely that GCN would be present on site.
- 7.16. As a precautionary measure, the following mitigation will be implemented to avoid impacts on GCN from the proposed works:
- i. Vegetation on site will be cut and maintained short (maximum height of 10cm) until the start of works, to discourage animals from using these areas.
- 7.17. After these precautionary mitigation measures, we predict no impact on GCN as a result of the development plans, and no further surveys are necessary.

Water voles and otters

- 7.18. The ditches within the adjacent floodplain grazing marsh were considered suitable for use by water vole and otters. However, the closest ditch is located approximately 20m from the site and thus safe working distances will be maintained.
- 7.19. No impacts are expected on these species and no mitigation is required.

Reptiles

- 7.20. The proposed works are not expected to result in any loss of reptile habitat with works limited to areas of buildings and hardstanding.
- 7.21. As a precautionary measure, the following mitigation will be implemented to avoid impacts on reptiles from the proposed works:
- i. Vegetation on site will be cut and maintained short (maximum height of 10cm) until the start of works, to discourage animals from using these areas.

7.22. After these precautionary mitigation measures, we predict no impact on reptiles as a result of the development plans, and no further surveys are necessary.

Other animals

7.23. The surrounding habitat of the site is considered suitable for hedgehogs. To maintain potential hedgehog routes within the site and between the site and further habitats, any fencing installed will be porous and provide access openings for hedgehogs (see Appendix G for examples).

7.24. General mitigation to protect wildlife during the construction period are as follows:

- Any excavations will have a rough sawn plank placed inside to act as a ramp to allow any animals that have fallen in to escape. The excavations will be checked each morning works are scheduled for, to remove any animals trapped.
- Lighting of the construction site at night will be minimised as far as practicable, to reduce the risk of possible disruption to nocturnal animals such as bats and badgers.
- Construction materials will be stored off the ground on pallets and waste materials in skips, to prevent providing shelter for animals and subsequent harm when materials are moved.

8. BIBLIOGRAPHY

- Baker, J., Beebee, T., Buckley, J. Gent, T., Orchard, D. (2011). *Amphibian Habitat Management Handbook*. Amphibian and Reptile Conservation: Bournemouth
- Barn Owl Trust (2012). *Barn Owl Conservation Handbook*. Pelagic Publishing: Exeter.
- Butcher, B., Carey, P., Edmonds, R., Norton, L., Treweek, J. (2020). *The UK Habitat Classification User Manual Version 1.1* at <http://www.ukhab.org/>
- Bright, P., Morris, P., Mitchell-Jones, T. (2006). *The dormouse conservation handbook*. English Nature
- British Standard BS 42020:2013 *Biodiversity - Code of Practice for planning and development*.
- British Standards Institution (2012). BS 5837:2012, *Trees in relation to design, demolition and construction – Recommendations*.
- CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*.
- Collins, J. (Ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn.)*. The Bat Conservation Trust, London.
- Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R., Lock, L. Musgrove, A., Noble, D., Stroud, D., Richard, G. (2015). *Birds of conservation concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man*. *British Birds* 108, 708-746.
- Edgar, P., Foster, J., Baker, J. (2010). *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation: Bournemouth
- English Nature (2001). *Great Crested Newt Mitigation Guidelines*. Peterborough.
- Gent, A.H. and Gibson, S.D. eds. (1998). *Herpetofauna Workers' Manual*. Peterborough, Joint Nature Conservation Committee.
- Griffiths, R.A., Raper, S.J., Brady, L.D. (1996). *Evaluation of a standard method for surveying common frogs (Rana temporaria) and newts (Triturus cristatus, T. helveticus, and T. vulgaris)*. Joint Nature Conservation Committee Report No. 259.
- International Commission on Illumination (2003). CIE 150:2003, *Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations*.
- Langton, T., Beckett, C., Foster, J. (2001). *GCN Conservation handbook*. Froglife.
- McLean, I.F.G., JNCC (Drafted by) on behalf of the Inter-agency Translocations Working Group (2003). *A Habitats Translocation Policy for Britain*.
- Mitchell-Jones (2004). *Bat mitigation guidelines*. English Nature: Peterborough
- Natural England (2021). *GCN Risk Zones*. Available: <https://naturalengland-defra.opendata.arcgis.com/search?q=GCN%20risk%20zone>.
- Oldham, R.S., Keeble, J., Swan, M.J.S., Jeffcote, M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. *Herpetological Journal* 10 (4), 143-155.
- Pearce, G.E. (2011). *Badger behaviour, conservation and rehabilitation*. Pelagic Publishing: Exeter.
- Sewell, D., Griffiths, R.A., Beebee, T.J.C., Foster, J., Wilkinson, J.W. (2013). *Survey protocols for the British herpetofauna*. ARC, DICE University of Kent and University of Sussex.
- Stone, E.L. (2013). *Bats and lighting: Overview of current evidence and mitigation*. University of Bristol.
- Strachan R., Moorhouse T., Gelling, M. (2011). *Water Vole Conservation Handbook Third Edition*. University of Oxford: Abingdon

Appendix A

Methods

Desktop Review

A desktop review of published data, such as records of protected sites and species, OS maps and satellite images has been carried out. A data search was carried out with both the Norfolk Biodiversity Information Service ("NBIS") and the Suffolk Biodiversity Information Service ("SBIS") as the site extended across the Norfolk/Suffolk border.

A field survey visit was conducted to confirm the findings of the desktop review and to record habitats and species located on site.

Equipment available for use during the survey were binoculars, ladders, torches, endoscope and a digital camera.

Habitats

The habitats on site have been defined using the UK Habitat Classification (Butcher *et al.*, 2020). Natural Environment and Rural Communities (NERC) Act (2006) habitats listed under section 41 have been identified where appropriate.

Bats

An assessment of the habitats on and surrounding the site for bat interest was made, in accordance with latest bat survey guidelines (Collins, 2016).

The buildings on site were assessed for their potential to support roosting bats and involved a thorough internal and external search of all suitable cavities, holes and crevices. All suitable areas, including objects, ledges and floors were inspected for the following signs:

- Bat droppings
- Stains around roosting places and entrance points
- Urine marks
- Prey remains
- Areas devoid of cobwebs
- Live or dead bats
- Suitable cracks and crevices for bats to enter

In exposed conditions, the signs of bat usage such as droppings and urine marks can be obliterated by heavy rain.

An evaluation system was applied to the building(s) using the following criteria:

- **Negligible roost suitability for bats.** These buildings have no potential roosting features for bats, or very few or minor features in an isolated or unsuitable location such that the presence of a bat roost is considered highly unlikely. Such buildings usually fall into two main types: generally, well maintained

without cracks and crevices, no gaps between bargeboard or soffit and wall, or without an attic space; or those which contain some or all of the above features, but are both draughty and thick in cobwebs or contain strong odours such as solvents, diesel etc. It must be borne in mind that a building from this latter group can become suitable for bats following refurbishment. This often happens to houses once the attic space has been cleaned and under-felted prior to timber treatment. When no suitable habitats for bats are found, no further surveys or European Protected Species (“EPS”) mitigation licence are required.

- **Low roost suitability for bats.** Buildings in this category have one or more potential roost sites that could be used by individual bats opportunistically. These buildings do not however provide suitable conditions (such as space, shelter, temperature, humidity, or light and noise disturbance) to be used on a regular basis by a large number of bats. Structures with low roost suitability for bats will require **one dusk emergence or one dawn re-entry survey** conducted between May and August to assess their current use by bats.
- **Moderate roost suitability for bats.** These buildings contain one or more potential roosting sites which could be regularly used by bats owing to their size, shelter, protection and conditions. These buildings are however unlikely to support a roost of high conservation status (maternity roost or hibernation roost). Structures with moderate roost suitability for bats will require two surveys, **one dusk emergence and one dawn re-entry survey** conducted between May and September with at least one of the surveys undertaken between May and August, to assess their current use by bats.
- **High roost suitability for bats.** This group includes buildings with one or more potential roost sites which are obviously suitable for use by a larger number of bats on a regular basis and potentially for longer periods of time owing to their size, shelter, protection and conditions. These buildings may support a roost of high conservation status (maternity roost or hibernation roost) and will require three activity surveys to assess their current use by bats. The surveys should include at least **one dusk emergence and** at least **one dawn re-entry survey** (the third survey can either be at dusk or dawn) and should be conducted between May and September with at least two of surveys undertaken between May and August.

Trees on and around the site were assessed for their suitability to support roosting bats. The assessment involved a ground level inspection of the exterior of the trees to search for features offering roosting potential to bats such as split limbs, woodpecker holes, cavities, lifted bark and dense thick-stemmed ivy.

An evaluation system was applied to the trees using the following criteria:

- **Negligible roost suitability for bats.** Trees unlikely to be used by roosting bats.
- **Low roost suitability for bats.** A tree of sufficient size and age to contain Potential Roosting Features (“PRFs”), but with none seen from the ground or features seen with only very limited roosting potential.
- **Moderate roost suitability for bats.** A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.

- **High roost suitability for bats.** A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection and surrounding habitat.

The habitats on and around the site were assessed for their commuting and foraging potential for bats. An evaluation system was applied to the commuting and foraging potential using the following criteria.

- **Negligible commuting and foraging potential for bats.** Habitat features unlikely to be used by commuting or foraging bats.
- **Low commuting and foraging potential for bats.** Habitats that could be used by a small number of commuting or foraging bats such as, a gappy hedgerow, unvegetated stream or lone trees, but are isolated and not well connected to the surrounding landscape.
- **Moderate commuting and foraging potential for bats.** Habitats that are continuous and connected to the wider landscape such as, lines of trees, scrub, linked back gardens, grasslands and water features.
- **High commuting and foraging potential for bats.** Habitats that are continuous and connected to the wider landscape such as, river valleys, watercourses, hedgerows, lines of trees, deciduous woodland, and grazed parkland. These habitats are likely to be used regularly by commuting or foraging bats and are likely to be close to, or connected to, known roosts.

Birds

The site and its surrounding habitats were assessed for their potential to support breeding birds. Bird nesting habitat could include grassland, hedgerows, scrub, trees and buildings.

Bird species noted during the site visit were recorded. Trees, buildings and grassland were checked for use by barn owls, swifts and skylarks.

Great crested newts

Habitats on and near the site were assessed for their suitability for great crested newts ("GCN").

Water features on and near the site were assessed for their suitability for occupation by GCN, according to a Habitat Suitability Index ("HSI"). The HSI is a theoretical index of a waterbody's suitability to support a breeding population of GCN and is calculated from a series of ten variables recorded on site, as detailed in Table 2.

Indices	Name	Description
SI1	Geographic Location	Lowland England or upland England, Scotland and Wales
SI2	Pond area	To the nearest 50m ²
SI3	Permanence	Number of years' pond dry out of ten
SI4	Water quality	Measured by invertebrate diversity
SI5	Shade	Percentage shading of pond edge at least 1m from shore
SI6	Fowl	Level of waterfowl use
SI7	Fish	Level of fish population
SI8	Pond count	Number of ponds within 1km divided by 3.14
SI9	Terrestrial habitat	Quality of surrounding terrestrial habitat
SI10	Macrophytes	Percentage extent of macrophyte cover on pond surface

Table 2, HSI indices.

The HSI score is the geometric mean of the ten suitability indices calculated:

$$HSI = (SI1 \times SI2 \times SI3 \times SI4 \times SI5 \times SI6 \times SI7 \times SI8 \times SI9 \times SI10)^{1/10}$$

Once calculated, the HSI score for a waterbody can be categorised as follows:

Excellent (>0.8)

Good (0.7 – 0.79)

Average (0.6 – 0.69)

Below Average (0.5 – 0.59)

Water voles, otters and white-clawed crayfish

Water features on and adjacent to the site were assessed for use by water vole, otter and white-clawed crayfish. Otters in England typically use areas of fresh water and streams and ditches for moving between habitats. Otter holts are usually located underneath tree roots, in tunnels. Field signs of presence include spraints on prominent features such as bridges, tree bases or boulders, and footprints.

Water voles inhabit burrows in the banks of ponds, ditches, streams and rivers. Field signs include droppings left in latrine spots, burrow entrances or feeding remains.

White-clawed crayfish inhabit streams and rivers with a moderate flow rate, and lakes. Clear, well-oxygenated water is preferred. Typical habitat features include crevices in rocks, gaps between stones, submerged plants and tree roots.

Reptiles

The habitats on the site and within the proposed area of works were assessed for suitability for reptiles.

Reptiles rely on conditions that allow them to maintain their body temperature through basking. They require access to direct sunlight, shelter from the elements, sufficiently large populations of prey species and hibernation sites.

Reptiles typically favour a habitat mosaic with a diverse vegetation structure, which could include grassland, scrub and woodland.

Badgers

An inspection of all habitats with the potential to support badger *Meles meles* sett construction and foraging activities on the application site was undertaken. Any incidental observations of badger signs were also recorded. The survey comprised searching for evidence of badger activity in the form of setts, droppings, pathways, snuffle holes, hair and footprints.

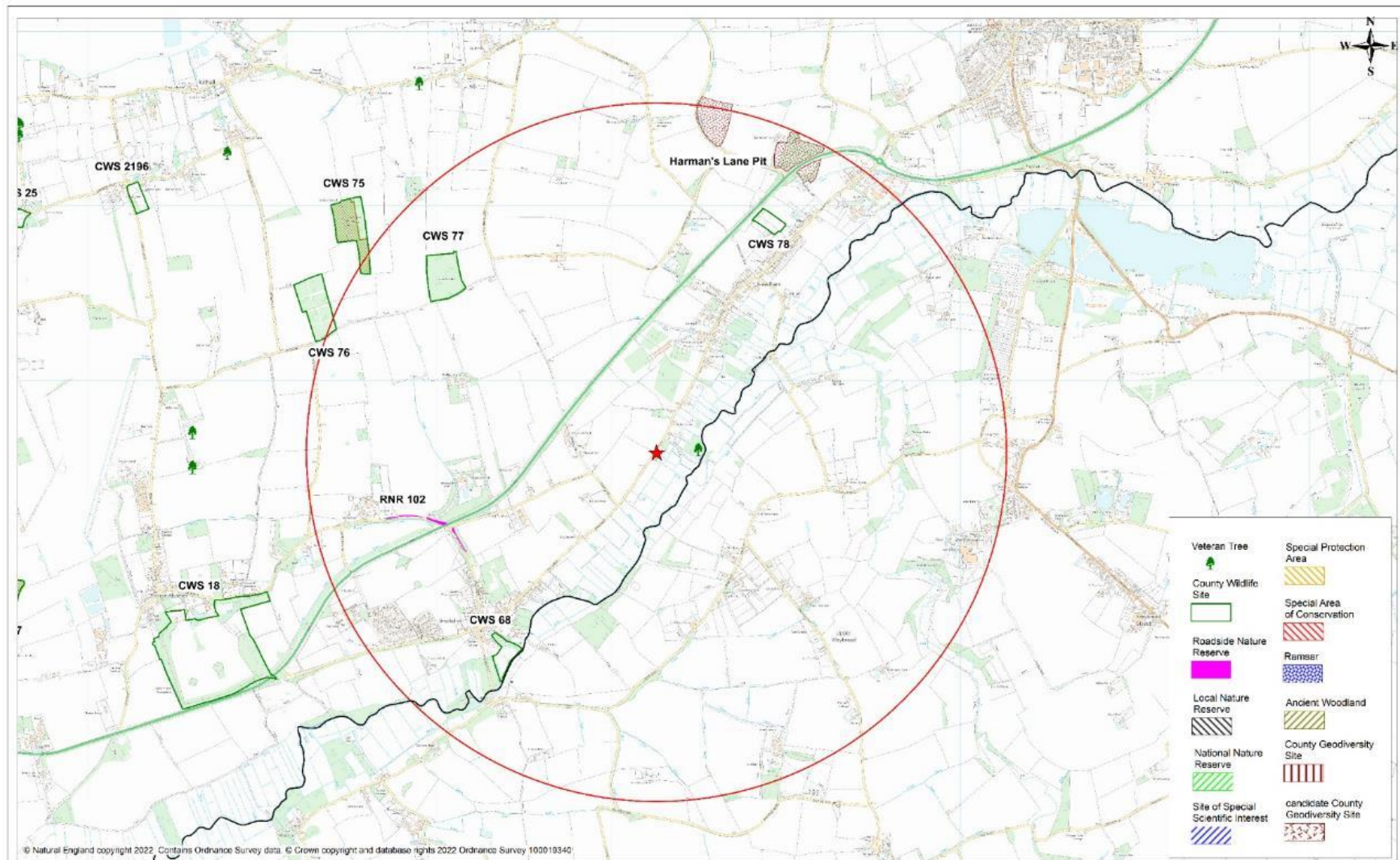
Dormice

Dormice habitats include deciduous woodland, hedgerows and scrub. Dormice are found mainly in the south of England, including Kent and Sussex, with sporadic populations elsewhere. An assessment of the suitability of site habitats for occupation by dormice was made.

Other protected species

Particular regard was made to the nature of the proposed development and the potential of impact upon any other protected species, species which are nationally or locally scarce, or species subject to other conservation designations such as Red Data Book or Priority S41 species, from the development work, should these be present in the area.

Appendix B
Map of protected sites within 2km

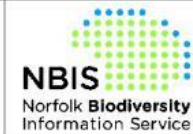


2km Data Search Around TM2226 8059, Needham

for Greenlight Environmental Consultancy

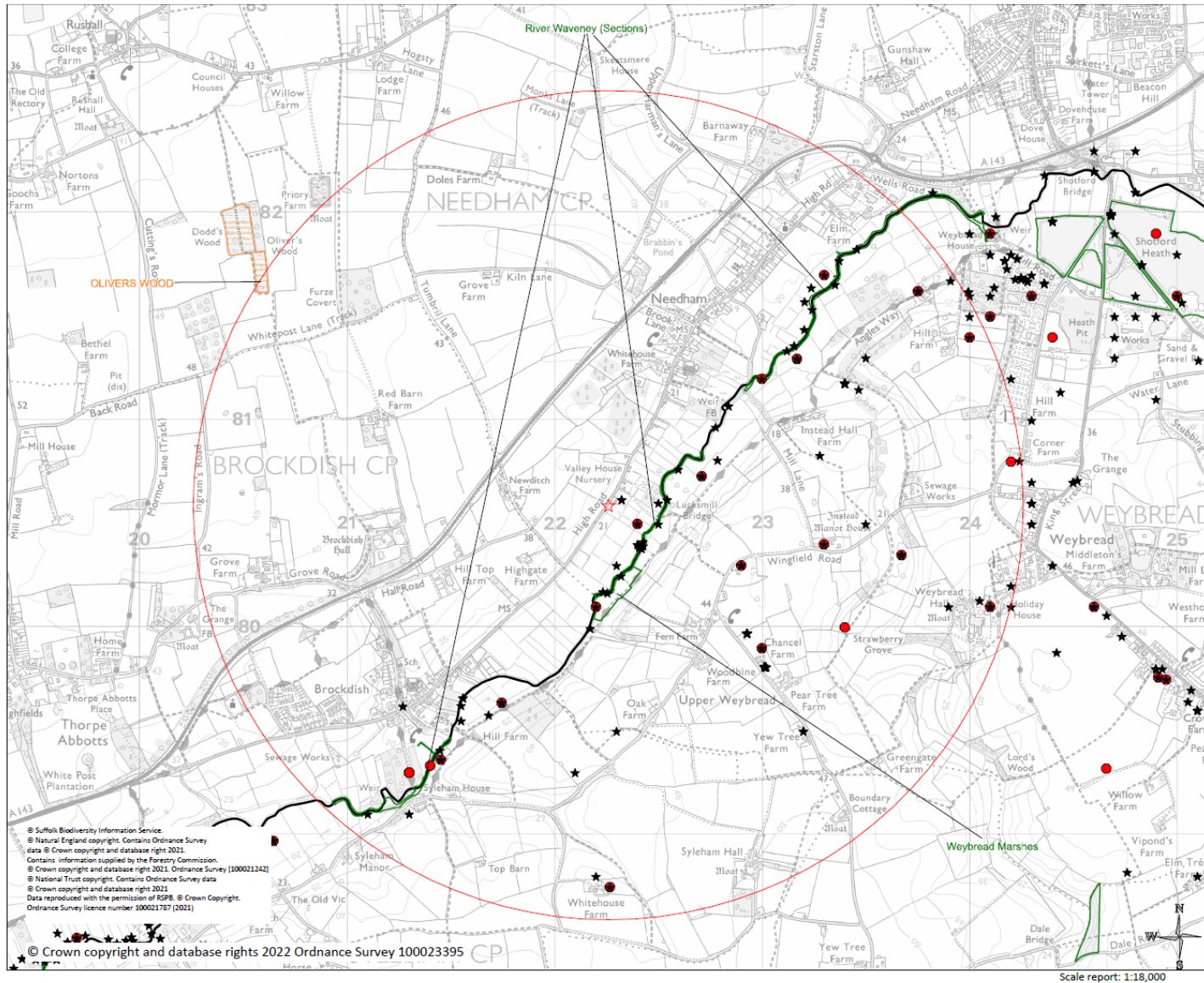
Scale 1:20000

Compiled by L. Oddy on 27 May 2022

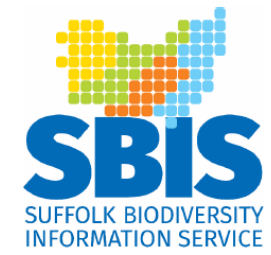


Norfolk Biodiversity Information Service
 County Hall
 Martineau Lane
 Norwich NR1 2SG

Tel: 01603 224458 Fax: 01603 223219



- Data Enquiry
 - ☆ Search Point
 - Search Area
- Protected, Locally Scarce and Rare Species
 - ★ Record Locations (for grids of 6 fig. or greater)
- Schedule 9 Species
 - Record Locations (for grids of 6 fig. or greater)
- Ancient/Veteran/Notable Trees
 - 🌳
- Roadside Nature Reserve
 - 📏
- County Wildlife Sites
 - 🌿
- County GeoSites
 - 🗺️
- SSSI
 - 🌿
- LNR
 - 🌿
- SPA
 - 🌿
- SAC
 - 🌿
- RAMSAR
 - 🌿
- NNR
 - 🌿
- SWT Reserve
 - 🌿
- Ancient Woodland Inventory
 - 🌿
- Other Public or Conservation Ownership/Management
 - 🌿 Forestry Commission, National Trust (public access), RSPB (public access)
- National Park
 - 🌿 The Broads
- AONB
 - 🌿 Suffolk Coast and Heaths or Dedham Vale
- County Border
 - 📏



Date: 06/06/2022 | Drawn by: Andy Mercer

Greenlight (Needham TM22268059) 2km Data Enquiry

Appendix C

Protected sites citations

County Wildlife Sites citations (SBIS)

CWS Number	Mid Suffolk 158
Site Name	WEYBREAD MARSHES
Parish	WEYBREAD
District	MID SUFFOLK
NGR	TM223802
Description	This site comprises a number of small floodplain grazing marshes (Priority habitat) adjoining the River Waveney. These cattle-grazed marshes have not been treated with agricultural chemicals and therefore support a species-rich wetland plant community. In addition to a range of fairly common plants the site also supports a number of uncommon species such as ragged-Robin and early marsh orchid. The ditches which intersect the marshes support an interesting flora such as brooklime and valerian, which provides habitat opportunities for aquatic invertebrates including a number of dragonfly species. The Angles Way, a long distance footpath, runs through the site.
Area	1.89
CWS Number	Mid Suffolk 88
Site Name	RIVER WAVENEY
Parish	WEYBREAD
District	MID SUFFOLK
NGR	TM100795
Description	The River Waveney forms the County boundary between Suffolk and Norfolk as it flows through the Mid Suffolk District from Diss in the west towards Bungay in the east. Many stretches of the River Waveney are of conservation value, however five sections have been selected as being of particular importance for aquatic wildlife. These sections are colonised by a species-rich aquatic flora. Fringing vegetation includes reed, pond sedge, marsh-marigold and nodding-bur marigold. This provides suitable habitat for water birds for example moorhen, mallard and coot. The watercourse itself

supports a similarly varied flora including arrowhead, yellow water-lily and spiked water-milfoil. In addition to many common water birds, the River Waveney is noted for its significant population of breeding kingfishers. Kingfishers are known to breed in at least four of the selected sections. This bird is a specially protected species (Schedule 1, Wildlife and Countryside Act, 1981).

Area 8.02

County Wildlife Sites citations (NBIS)

CWS Number	Name	Description	Last surveyed
78	St. Peter's Meadow	This site consists of two adjacent fields separated and surrounded by hedges. The northern field (Oliver's Meadow) is grazed by geese whilst the southern (St Peter's) is ungrazed but cut for silage. The site slopes gently downwards to the east and contains wall barley (<i>Hordeum marinum</i>) and corn parsley (<i>Petroselinum segetum</i>), both scarce in Norfolk. Both fields have a similar vegetation with a sward dominated by false oat-grass (<i>Arrhenatherum elatius</i>) with abundant red fescue (<i>Festuca rubra</i>) and frequent smooth meadow-grass (<i>Poa pratensis</i>) and yorkshire fog (<i>Holcus lanatus</i>). The northern field has abundant ribwort plantain (<i>Plantago lanceolata</i>) and frequent bulbous buttercup (<i>Ranunculus bulbosa</i>) and grey sedge (<i>Carex divulsa</i>) whilst the southern field has frequent perforate St. John's wort (<i>Hypericum perforatum</i>) and hedge crane's-bill (<i>Geranium pyrenaicum</i>). Both fields contain frequent germander speedwell (<i>Veronica chamaedrys</i>), ground-ivy (<i>Glechoma hederacea</i>), common sorrel and sweet violet (<i>Viola odorata</i>). Creeping cinquefoil (<i>Potentilla reptans</i>), bladder campion (<i>Silene vulgaris</i>), burnet-saxifrage (<i>Pimpinella saxifraga</i>), selfheal (<i>Prunella vulgaris</i>) and yarrow (<i>Achillea millefolium</i>) occur more rarely. Both fields tend to be more species-rich to the west and around the edges. To the southwest of the site is a small area of scrub, largely hawthorn (<i>Crataegus monogyna</i>) and sloe (<i>Prunus spinosa</i>) over ivy (<i>Hedera helix</i>) and ground-ivy. To the northwest is an area of semi-natural woodland with a canopy of ash (<i>Fraxinus excelsior</i>) over hawthorn, sloe and elm (<i>Ulmus</i> sp.) and a ground flora of sweet violet, dog's mercury (<i>Mercurialis perennis</i>), ivy, groundivy and rough meadow-grass (<i>Poa trivialis</i>). The hedges are of hawthorn and elm with planted oak (<i>Quercus robur</i>) and horse-chestnut (<i>Aesculus hippocastanum</i>).	2007
75	Oliver's & Dodd's Woods	This is an area of ancient woodland consisting mainly of neglected hornbeam <i>Carpinus betulus</i> coppice with oak <i>Quercus robur</i> or ash <i>Fraxinus excelsior</i> . The southern block of woodland is mainly overgrown hornbeam coppice and some single-stemmed hornbeams, with oak standards of about 100 years old. There is no ground flora apart from some bramble	2013

		<p><i>Rubus fruticosus</i> agg. And common nettle <i>Urtica dioica</i> within deep, bare leaf litter. An area locally dominated by hazel <i>Corylus avellana</i> occurs in the north-west corner. The northern block is divided into three linear strips. The western strip consists of overgrown hornbeam coppice with oak standards; the centre strip has regrown hornbeam and horse chestnut <i>Aesculus hippocastanum</i> coppice, and small hawthorn <i>Crataegus monogyna</i> and ash standards; and the eastern strip has oak standards with tall overgrown hornbeam and some horse chestnut coppice with hazel and hawthorn. Occasional bramble and common nettle form the only ground flora in these areas. Occasional other shrubs occur throughout the woodland, including elder <i>Sambucus nigra</i>, hawthorn and gooseberry <i>Ribes uva-crispa</i>. An area of blackthorn <i>Prunus spinosa</i> and hawthorn scrub occurs on the east side with rare holly <i>Ilex aquifolium</i>. A footpath passes between the western and central linear strips in the north, with scattered hornbeam, ash and field maple <i>Acer campestre</i> on both sides of the path and shallow dry ditches on either side. The slightly lighter conditions here support plants such as enchanter's nightshade <i>Circaea lutetiana</i>, wood avens <i>Geum urbanum</i> and some primrose <i>Primula vulgaris</i>. Broad buckler fern <i>Dryopteris dilatata</i> occurs occasionally on the edges of the wood. Old hedges and ditches surround the site and also divide the northern part of the wood into three. Most of the ditches are dry and shallow. Hedge species include hornbeam, field maple, hawthorn and hazel. Three ponds stand around the edges of the wood with some water in the immediately adjacent ditches. The western edge of the wood holds local populations of plants including primrose sanicle <i>Sanicula europaeus</i>, wood sedge <i>Carex sylvatica</i>, common dog violet <i>Viola riviniana</i>, honeysuckle <i>Lonicera periclymenum</i>, wood avens <i>Geum urbanum</i> barren strawberry <i>Potentilla sterilis</i> and false brome <i>Brachypodium sylvaticum</i>.</p>	
77	Furze Covert	<p>This wood has been extensively used for recreation and contains the remnants of banks, trenches and toilets. There is a large open area in the centre of the site which contains a sizeable pond. The edges of the site are a typical semi-natural woodland. Wooded areas have a canopy dominated by oak (<i>Quercus robur</i>), and ash (<i>Fraxinus excelsior</i>) with less frequent hornbeam (<i>Carpinus betulus</i>). The shrub layer consists of a scattering of young trees, largely hawthorn (<i>Crataegus monogyna</i>), elder (<i>Sambucus nigra</i>), ash, hornbeam and hazel (<i>Corylus avellana</i>). Where the canopy casts dense shade the ground flora is of dog's mercury (<i>Mercurialis perennis</i>), herb-robert (<i>Geranium robertianum</i>), wood avens (<i>Geum urbanum</i>) and ground-ivy (<i>Glechoma hederacea</i>) whilst in more open areas bramble (<i>Rubus fruticosus</i> agg.), nettle (<i>Urtica dioica</i>) and grasses such as creeping bent (<i>Agrostis stolonifera</i>) are abundant. The water quality of the pond is rather poor although broad-leaved pondweed (<i>Potamogeton natans</i>) occurs on the surface and branched bur-reed (<i>Sparganium erectum</i>) around the edges. The bankside vegetation is rich and varied with soft rush (<i>Juncus effusus</i>), cyperus sedge (<i>Carex pseudocyperus</i>), bittersweet (<i>Solanum dulcamara</i>), great willowherb (<i>Epilobium hirsutum</i>), jointed rush (<i>Juncus articulatus</i>) and square-stalked St. John's-wort (<i>Hypericum</i></p>	1995

		tetrapterum). The surrounding open area has frequent nettle, creeping thistle (<i>Cirsium arvense</i>), great willowherb and creeping buttercup (<i>Ranunculus repens</i>). There is no canopy here although young ash and hornbeam are frequent.	
76	Whitepost Lane Wood	<p>This is an area of broadleaved woodland over clay soils. The site is divided into two square blocks and is surrounded by ditches, with another ditch bisecting the site from east-west. CWS 75 Oliver's and Dodd's Woods stands one field away, to the east. The southern block of woodland is composed mainly of ash <i>Fraxinus excelsior</i> and occasional oak <i>Quercus robur</i> standards, with abundant hawthorn <i>Crataegus monogyna</i> and some young ash below. In the middle of the block is a dense thicket of hawthorn, blackthorn <i>Prunus spinosa</i> and sprawling goat willow <i>Salix caprea</i> in locally damp ground. Elder <i>Sambucus nigra</i> is locally frequent in a pheasant feeding area on the northern edge. Common nettle <i>Urtica dioica</i> is the dominant species in the field layer, with some dog's mercury <i>Mercurialis perennis</i> and occasional ground ivy <i>Glechoma hederacea</i>. Herb robert <i>Geranium robertianum</i> becomes more frequent in the south half of this block, with occasional germander speedwell <i>Veronica chamaedrys</i> and three-nerved sandwort <i>Moehringia trinervia</i>. The northern block is damper although with a similar range of tree and shrub species. The north half is particularly damp, with frequent goat willow <i>Salix caprea</i> which becomes very dense and tangled in the middle-west of the block. An area of dense hawthorn occurs in the south-eastern corner, while old falling and leaning elder are frequent in the south-west. Under the trees, nettle remains the main vegetation, though false brome <i>Brachypodium sylvaticum</i> grows along the lighter northern edge. The ground flora is most diverse along the western edge of the woodland, where species include false brome, primrose <i>Primula vulgaris</i>, three-nerved sandwort, wood avens <i>Geum urbanum</i> and occasional dog's mercury. Grassy tracks run through both blocks of woodland. The northern block is divided into four by damp grassy tracks, creating a narrow grassy rectangle on the eastern side, with Yorkshire fog <i>Holcus lanatus</i>, rough meadow grass <i>Poa trivialis</i>, cock's-foot <i>Dactylis glomerata</i> with common nettle and creeping thistle <i>Cirsium arvense</i>. The northernmost track supports soft rush <i>Juncus effusus</i> and hairy sedge <i>Carex hirta</i> in the damper parts. The southern part of the north-south track has sweet-grass <i>Glyceria</i> sp., as well as creeping buttercup <i>Ranunculus repens</i> and brooklime <i>Veronica beccabunga</i>. The damper northern half of the track is encroached by shrubs. In the southern block, the tracks run across the northern edge and then down to the pheasant enclosure. The lighter conditions lead to locally abundant common nettle and creeping thistle <i>Cirsium arvense</i>, with locally frequent bugle <i>Ajuga reptans</i>. The hedges around the site are species-rich, composed of frequent hawthorn, some with old trunks, and field maple <i>Acer campestre</i>, with oak and ash standards, occasional hornbeam <i>Carpinus betulus</i> dogwood <i>Cornus sanguinea</i>, hazel, blackthorn and apple <i>Malus domestica</i>, with ivy <i>Hedera helix</i> among them all. Live and dead small-leaved elm <i>Ulmus minor</i> agg. also occur. There is a small pond on the west edge of the northern wood.</p>	2013

68	Brockdish Common and Adj. Grassland	<p>Please note: Brockdish Common is part of a larger County Wildlife Site. For the Wildlife in Common survey only the area of registered common was surveyed, between Common Lane and the wet ditch, along with a small part of adjacent CWS 68 bordering the river. The whole site is comprised of two distinct areas of land. The first is an area formally known as 'Adj. River Waveney' which was designated a CWS in 1983 and last surveyed in 1985 and which borders the southern boundary of Brockdish Common. The second is Brockdish Common which is registered common land and was surveyed in 2016 and which forms an extension to 'Adj. River Waveney'. The former area known as 'Adj. River Waveney' is a small area of grassland which at the time of the survey was unimproved and species-rich and which is bisected by a narrow dyke which runs north-south. Its south eastern boundary is adjacent to the River Waveney and its western boundary borders semi-natural young woodland and scrub. At the time of the previous survey, the site was grazed by horses. The sward is dominated by Yorkshire fog <i>Holcus lanatus</i> with abundant soft rush <i>Juncus effusus</i>. Less frequently are found greater pond-sedge <i>Carex riparia</i>, greater bird's-foot trefoil <i>Lotus uliginosus</i>, ragged-robin <i>Lychnis flos-cuculi</i>, small fleabane <i>Pulicaria vulgaris</i>, buttercup <i>Ranunculus</i> sp. and thistle <i>Cirsium</i> sp. Brockdish Common is a mosaic of tall herb vegetation, trees, scrub and mown grassy paths on neutral soils and which becomes damper toward the river. Its boundaries are demarcated by Common Lane to the north, a tributary stream of the River Waveney to the south, the River Waveney is to the east and housing to the west. The eastern boundary slopes down to the river and which ranges from moderate to steep. The mound is vegetated with reed sweet-grass <i>Glyceria maxima</i>, common nettle <i>Urtica dioica</i> and reed canary-grass <i>Phalaris arundinacea</i>. Nearer the water's edge common Unbranched bur-reed <i>Sparganium emersum</i>, water forget-me-not <i>Myosotis scorpioides</i> and large bitter-cress <i>Cardamine amara</i> occur with extensive areas of bare ground. In 2019, the north-east riverside boundary of the registered common/CWS 68 supported pendulous sedge <i>Carex pendula</i>, fool's watercress <i>Apium nodiflorum</i> and watermint <i>Mentha aquatica</i>. Marsh thistle <i>Cirsium palustre</i> is rare, as is false brome <i>Brachypodium sylvaticum</i> under scrub nearby. This area also contains a patch of Himalayan balsam <i>Impatiens glandulifera</i>. The river is overhung by scrub of almond willow <i>Salix Triandra</i>, elder <i>Sambucus nigra</i> and hawthorn <i>Crataegus monogyna</i>. The far eastern part of the site is composed of dense scrub of almond willow and elder with an understory of dog's mercury <i>Mercurialis perennis</i> along with common nettle and rough chervil <i>Chaerophyllum temulum</i>, while goosegrass <i>Galium aparine</i> and large bindweed <i>Calystegia silvatica</i> scramble through the scrub with hop <i>Humulus lupulus</i>. Himalayan balsam is locally frequent in the region of the river. The remainder of the site is largely tall vegetation with occasional shrubs and a few planted trees. The tall species are a mixture of common nettle, bramble <i>Rubus fruticosus</i> agg., hogweed <i>Heracleum sphondylium</i>, great willowherb <i>Epilobium hirsutum</i> greater pond sedge <i>Carex riparia</i> and pendulous sedge, as well as grasses such as false oat-grass <i>Arrhenatherum elatius</i>. Goosegrass and large bindweed wind through this</p>	2019
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		<p>dense vegetation. Raspberry <i>Rubus idaeus</i> and spear thistle <i>Cirsium vulgare</i> are locally frequent. Marsh woundwort <i>Stachys palustris</i> is rare. The grassy paths support species including rough meadow-grass <i>Poa trivialis</i>, common couch <i>Elytrigia repens</i>, ground elder <i>Aegopodium podagraria</i>, germander speedwell <i>Veronica chamaedrys</i> and ground-ivy <i>Glechoma hederacea</i>, and tufted vetch <i>Vicia cracca</i>. Meadowsweet <i>Filipendula ulmaria</i> grows locally on the eastern side where the conditions are damper. There is the occasional hawthorn tree on the Common and several planted ones including hornbeam <i>Carpinus betulus</i>, ash <i>Fraxinus excelsior</i> and copper beech <i>Fagus sylvatica</i> 'Purpurea'. An overgrown hedge of hawthorn and hazel <i>Corylus avellana</i> runs down the northern side with occasional standards of ash, oak <i>Quercus robur</i>, sycamore <i>Acer pseudoplatanus</i> and goat willow <i>Salix caprea</i>. The southern boundary has a continuous line of scrub and mainly comprising goat willow and hawthorn and some of which is mature.</p>	
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Appendix D Legislation

European Protected Species

The Ramsar Convention (1971) on Wetlands of International Importance especially as Waterfowl Habitat seeks to promote the conservation and wise use of wetlands, particularly those which support internationally significant numbers of water birds. This is achieved through the designation of Ramsar Sites.

The European Community Council Directive on the Conservation of Wild Birds (79/409/EEC) sets out general rules for the conservation of all naturally occurring wild birds, their nests, eggs and habitats. It requires member states to designate Special Protection Areas (SPAs) for protection of certain species.

The main piece of legislation relating to nature conservation in Great Britain is **The Wildlife and Countryside Act 1981 (as amended)**. This Act is supplemented by provision in **The Countryside and Rights of Way (CROW) Act 2000** and **The Natural Environment and Rural Communities Act 2006 (in England and Wales)**. This act provides varying degrees of protection for the listed species of flora and fauna, including comprehensive protection of wild birds, their nests and eggs.

The Countryside and Rights of Way Act 2000 strengthens the protection given to SSSIs. It revises the procedures for the notification of SSSIs and for the consenting of operations which may damage the special interest of a SSSI. Local authorities have a duty to take steps, consistent with the proper exercise of their functions, to further the conservation and enhancement of SSSIs. The act also strengthens the existing provisions of the Wildlife and Countryside Act 1981 for the enforcement of wildlife legislation, including a new offence of "recklessly" destroying or damaging the habitats of certain protected species.

UK wildlife is also protected under **The Conservation (Natural Habitats &c.) Regulations 1994** (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. In 2017, these Regulations, together with subsequent amendments, were consolidated into **The Conservation of Habitats and Species Regulations 2017**.

The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites. The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 5. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Protection of Badgers Act 1992 consolidates previous badger legislation by providing comprehensive protection for badgers and their setts, with a requirement that any authorised sett disturbance or destruction be carried out under licence.

The Hedgerows Regulations 1997 aim to protect important hedgerows in the countryside. They make it illegal to remove most countryside hedges without first notifying the local planning authority, and provide protection for 'important hedgerows'.

County Wildlife Site is a non-statutory designation used to identify high quality wildlife habitats in a county context. Local Authorities have a responsibility as part of their planning function to take account of sites of substantial nature conservation value and to consider them alongside other material planning considerations. The location of County Wildlife Sites will be included in Local Plans and Development Documents.

National Planning Policy - National Planning Policy Framework (NPPF)

Section 15 of the National Planning Policy Framework 2021 (NPPF): Conserving and enhancing the natural environment states that 'planning policies and decisions should contribute to and enhance the natural and local environment by ... minimising impacts on and providing net gains for biodiversity.'

Office of The Deputy Prime Minister ("ODPM") Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the planning system.

Paragraph 98 of Circular 06/2005 states that 'the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat'.

Implications of legislation and policies

Without this ecological assessment, the potential developer would be unable to demonstrate due diligence in his responsibilities. Furthermore, the local planning authority would not have been provided with sufficient information for a planning decision to be made. This could result in non-determination or refusal of the application.

With legal responsibilities and planning implications, it is essential that any ecological assessment of a potential development site, including the area of this report, must determine the possible presence or absence of any protected species as part of any planning development consideration.

Where mitigation or compensation measures are required to ensure that no significant impacts will result on biodiversity from the development, the proposed measures may be secured through planning conditions or by EPS Mitigation Licences from Natural England.

Bats

All bat species in Britain are protected under the Wildlife and Countryside Act 1981 through inclusion on Schedule 5. They are also protected under the Conservation (Natural Habitats &c.) Regulations 1994 (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. On 30th November 2017, these Regulations, together with subsequent amendments, were consolidated into the Conservation of Habitats and Species Regulations 2017.

European protected animal species (“EPS”) and their breeding sites or resting places are protected under Regulation 42. It is an offence for anyone to deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs. It is an offence to damage or destroy a breeding or resting place of such an animal. It is also an offence to have in one's possession or control, any live or dead European protected species.

The threshold above which a person will commit the offence of deliberately disturbing a wild animal of a European protected species has been raised. A person will commit an offence only if he deliberately disturbs such animals in a way as to be likely significantly to affect (a) the ability of any significant groups of animals of that species to survive, breed, or rear or nurture their young, or (b) the local distribution of abundance of that species. The existing offences under the Wildlife and Countryside Act (1981) as amended which cover obstruction of places used for shelter or protection (for example, a bat roost), disturbance and sale still apply to European protected species.

This legislation provides defences so that necessary operations may be carried out in places used by bats, provided the appropriate Statutory Nature Conservation Organisation (in England this is Natural England) is notified and allowed a reasonable time to advise on whether the proposed operation should be carried out and, if so, the approach to be used. The UK is a signatory to the Agreement on the Conservation of Bats in Europe, set up under the Bonn Convention. The Fundamental Obligations of Article III of this Agreement require the protection of all bats and their habitats, including the identification and protection from damage or disturbance of important feeding areas for bats.

Barn Owls

The Habitats Regulations (1994), as amended, states that a person commits an offence in the case of Barn Owl only if this species is disturbed in the breeding season. This applies equally to all those bird species listed under Schedule 1.

Breeding Birds

It is an offence to kill, injure or take any wild bird; take, damage or destroy the nest of any wild bird while that nest is in use or being built (even of "pest" species); take or destroy the eggs of any wild bird.

Great Crested Newts

Great crested newts are protected under both English and European law. It is an offence to kill, injure, disturb or take great crested newts or to damage or destroy their places of shelter, whether the animals are present or not.

Water Vole

The water vole received limited legal protection in April 1998 through its inclusion in Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) for some offences. Legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a water vole;

- possess or control a dead or live water vole, or any part of a water vole;
- intentionally or recklessly damage or destroy access to any structure or place which water voles use for shelter or protection or disturb Water Voles while they are using such a place;
- sell, offer for sale or advertise for sale live or dead Water Voles

Water voles, their breeding sites and resting places are protected by law. In most cases, work can be planned to avoid harming water voles. If works cannot avoid disturbing them or damaging their habitats, you may be able to get a licence from Natural England.

Otters

Otters are protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and revised by the Countryside and Rights of Way Act 2004, making it an offence to:

- intentionally kill, injure or take an otter;
- possess or control any (live or dead) otter, or any part of or anything derived from an otter;
- intentionally or recklessly damage or destroy or obstruct access to any structure or place used for shelter or protection by an otter;
- intentionally or recklessly disturb an otter while it is occupying a structure or place for that purpose;
- to sell, offer for sale, possess or transport for the purpose of sale any (live or dead) otter or part or derivative of an otter;
- to advertise for buying and selling such things.

Furthermore, otters are included on Schedule 2 of the Conservation (Habitats &c.) Regulations (1994), making it an offence to:

- deliberately to capture or kill a wild animal of a European protected species;
- deliberately to disturb any such animal;
- deliberately to take or destroy the eggs of such an animal; or
- damage or destroy a breeding site or resting place of such an animal.

Otters are also listed as a priority species on the UK and Biodiversity Action Plans.

White-Clawed Crayfish

This crayfish is listed under Annex II of the habitats directive and areas are designated as Special Areas of Conservation to protect this species. Outside of this a licence is required to capture this species. It is listed as a priority species under the Biodiversity Action Plan and is a Species of Principal Importance under section 41 of the NERC Act 2006.

Reptiles

Reptiles such as common lizard, slowworm, grass snake or adder are protected under Section 9 of the Wildlife & Countryside Act (1981) as amended. The legislation makes it illegal to deliberately or recklessly kill or injure

any native reptile. This protection therefore requires that reasonable effort be made to avoid harm to reptiles during developments on land occupied by reptiles.

Badger

The Wildlife and Countryside Act (1981) and its subsequent amendment in 1985 made it an offence to take, kill, injure or ill-treat a badger. The badger gained further protection under the auspices of The Protection of Badgers Act (1992) which consolidates all former protective legislation in relation to badgers, except their inclusion on Schedule 6 of the Wildlife and Countryside Act 1981.

Under the 1992 Act, the badger sett is protected against obstruction, destruction, and damage; furthermore, the animal's access to and from the sett must not be impeded. It should be noted that the concept/definition of the sett extends beyond the main sett to include annexe, subsidiary and outlying setts. However, although the badger and its sett are protected (including access to the sett), the wider habitat and foraging ground is not.

Dormice

Dormice are protected from being killed, injured, captured or disturbed and their resting and breeding places should not be damaged or destroyed.

Natural England Licensing - EPS Mitigation Licensing

Licences can be obtained from the Wildlife Management and Licensing Service at Natural England to allow certain activities that would otherwise constitute an offence, for the purposes of development (e.g. destruction of a bat roost, loss of great crested newt aquatic and terrestrial habitat, etc).

Appendix E

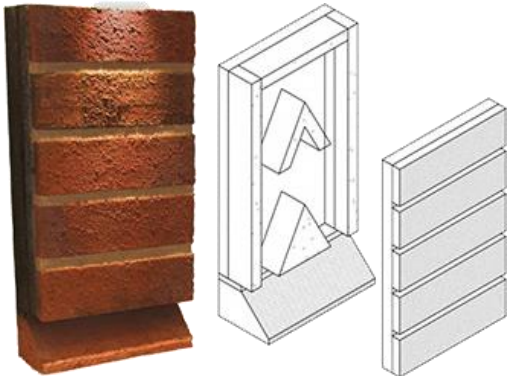
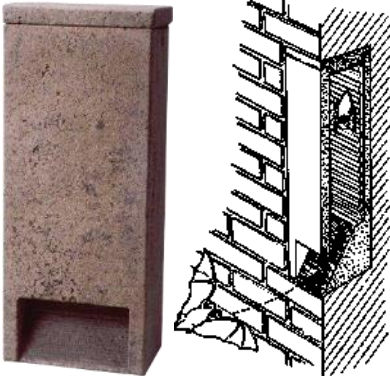


Plant species recorded on site

English name	Scientific name
Bramble	<i>Rubus fruticosus</i>
Buddleia	<i>Buddleja sp.</i>
Cherry	<i>Prunus sp.</i>
Cleavers	<i>Galium aparine</i>
Dame's rocket	<i>Hesperis matronalis</i>
Dove's-foot cranesbill	<i>Geranium molle</i>
Elder	<i>Sambucus nigra</i>
Field maple	<i>Acer campestre</i>
Forget-me-not	<i>Myosotis scorpioides</i>
Foxglove	<i>Digitalis purpurea</i>
Garlic mustard	<i>Alliaria petiolata</i>
Ground ivy	<i>Glechoma hederacea</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Herb-robert	<i>Geranium robertianum</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Mouse-ear-hawkweed	<i>Hieracium pilosella</i>
Nettle	<i>Urtica dioica</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Perennial ryegrass	<i>Lolium perenne</i>
Prickly sow thistle	<i>Sonchus asper</i>
Red dead-nettle	<i>Lamium purpureum</i>
Tutsan	<i>Hypericum androsaemum</i>
Yorkshire fog	<i>Holcus lanatus</i>

Appendix F

Examples of bat and bird boxes

(images sourced from www.nhbs.com, www.habibat.co.uk and www.manthorpe.co.uk)

<p style="text-align: center;">Integrated bat box Habibat Bat Box</p> 	<p style="text-align: center;">Integrated bat box 1FR Schwegler Bat Tube</p> 
<p style="text-align: center;">Standalone bat box 2F Schwegler Bat Box (General purpose)</p> 	<p style="text-align: center;">Standalone bat box 1FF Schwegler Bat Box with built-in wooden rear panel</p> 

Recommendations for installing bat boxes:

(Sourced from Bat Conservation Trust www.bct.org)

Ideally, several boxes should be put up facing in different directions to provide a range of conditions.

Locate boxes:

- Where bats are known to feed close to hedges and treelines (some bats use a treeline or hedgerow for navigation, putting boxes near these features may help the bats find the box).
- On trees: boxes should be placed on the trunk of a mature tree, where there is a clear flight line/accessible entrance.
- On buildings: boxes should be placed as close to the eaves as possible.
- As high as possible (ideally, at least 3 to 4m above the ground, where safe installation is possible).
- In sunny places, sheltered from strong winds (usually between south-west and south-east).

Make sure the boxes are secured.

Boxes can be installed on trees using adjustable ties to avoid damaging the trees. Otherwise, timber screw bolts or nails can be used. Aluminium alloy nails are less likely to damage saws and chipping machinery.

Bats need time to find and explore new homes, and it may be several months or even years before boxes have residents. Once bats find a place they want to live they can return over and over again. Droppings on the landing area, urine stains around the lower parts of the box and chittering noises from inside on warm afternoons and evenings are signs of occupation.

<p>Small bird nesting box 1B Schwegler Nest Box</p> 	<p>Small bird nesting box 2H Schwegler Robin Box</p> 
<p>Integrated swift box Schwegler Brick Nest Box Type 25</p>  <p>Type 25</p>	<p>Integrated swift box Manthorpe Swift Brick</p> 
<p>Integrated sparrow terrace 1SP Schwegler Sparrow Terrace</p> 	<p>Integrated sparrow terrace Terraced Sparrow Box</p> 

Recommendations for installing bird boxes:

(Sourced from British Trust for Ornithology www.bto.org and Manthorpe www.manthorpe.co.uk)

The highest priority when siting a nest box must be to provide a safe and comfortable environment in which birds can nest successfully.

Tips for putting up a nest box:

- Boxes should be sited 1-3m from the ground, ideally on tree trunks but can be placed on the side of a shed or wall. Avoid areas where foliage obscures the entrance hole.
- Don't place boxes too close to another nest box of the same type, as this may promote aggressive behaviour between neighbours.
- Shelter your nest box from prevailing wind, rain and strong sunlight. The box should face between north and east, and angled vertically or slightly downwards to prevent rain entering.
- Make sure cats cannot get into the box.
- Keep nest box away from bird feeders.
- Use galvanized or stainless steel screws or nails. If fixing boxes to trees, galvanised wire can be used to tie the box to the trunk or hang it from a branch. Make sure to regularly inspect these fittings (every two or three years) to ensure the box remains securely attached.



Tips for putting up house sparrow terraces and swift bricks/boxes:

- Locate ≥ 5 m high on the gable wall of the property and above the level of the insulation zone.
- Where possible, install in locations that are unlikely to receive large amounts of direct sunlight during the hottest times of the day, ideal places include below the overhang of the verge and barge board.

Appendix G

Examples of hedgehog friendly fencing

(images sourced from www.quercusfencing.com and www.jackson-fencing.co.uk)

<p style="text-align: center;">Quercus Fencing</p> <p style="text-align: center;">Hedgehog friendly oak woven fencing panels</p> 	<p style="text-align: center;">Jacksons-Fencing</p> <p style="text-align: center;">Hedgehog friendly gravel board for use with slotted posts</p> 
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Recommendations for installing hedgehog friendly fencing:

(Sourced from Hedgehog Street www.hedgehogstreet.org)

A hedgehog friendly fence should have a gap measuring at least 13cm by 13cm in the gravel board. These gaps allow any hedgehog to pass through but are too small for nearly all pets.

At least one hedgehog friendly fence panel should be located on each side of your garden, to provide unimpeded access.

Almost all fencing materials can be made hedgehog friendly, but may require DIY adaptations. Please note that some concrete gravel boards contain metal rods running along the length of the boards to provide strength and rigidity, and cannot be cut. To overcome this, a gap can be left between the gravel board and post to provide the required gap.

Appendix H

Native species suitable for planting and sowing

Plants should be obtained from specialist nurseries and preferably be of local genetic stock.

Key: (f) – fruit and berry species; (e) – evergreen species; (se) semi-evergreen species; (d) – deciduous species

Trees	
Alder (d)	<i>Alnus glutinosa</i>
Apples (f; d)	<i>Malus spp.</i> (local varieties)
Ash (d)	<i>Fraxinus excelsior</i>
Beech (d)	<i>Fagus sylvatica</i>
Bird cherry (f; d)	<i>Prunus padus</i>
Elder (f; d)	<i>Sambucus nigra</i>
Elm (d)	<i>Ulmus procera</i>
Field maple (d)	<i>Acer campestre</i>
Pedunculate oak (d)	<i>Quercus robur</i>
Rowan (f; d)	<i>Sorbus aucuparia</i>
Pears (f; d)	<i>Pyrus spp.</i>
Silver birch (d)	<i>Betula pendula</i>
Small-leaved lime (d)	<i>Tilia cordata</i>
White willow (d)	<i>Salix alba</i>
Wild cherry (f; d)	<i>Prunus avium</i>
Walnut (d)	<i>Juglans regia</i>

Shrubs	
Blackthorn (f; d)	<i>Prunus spinosa</i>
Buckthorn (f; d)	<i>Rhamnus catharticus</i>
Crab apple (f; d)	<i>Malus sylvestris</i>
Dog rose (f; d)	<i>Rosa canina</i>
Dogwood (f; d)	<i>Cornus sanguinea</i>
Field maple (d)	<i>Acer campestre</i>
Guelder-rose (f; d)	<i>Viburnum opulus</i>
Hawthorn (f; d)	<i>Crataegus monogyna</i>
Hazel (d)	<i>Corylus avellana</i>
Holly (e)	<i>Ilex aquifolium</i>
Honeysuckle (f; d)	<i>Lonicera periclymenum</i>
Spindle (f; d)	<i>Euonymus europaeus</i>
Wild privet (f; se)	<i>Ligustrum vulgare</i>
Yew (f; e)	<i>Taxus baccata</i>

Flowering plants	
Bird's-foot trefoil	<i>Lotus corniculatus</i>
Black knapweed	<i>Centaurea nigra</i>
Common cat's-ear	<i>Hypochoeris radicata</i>
Common sorrel	<i>Rumex acetosa</i>
Common vetch	<i>Vicia sativa</i>
Cowslip	<i>Primula veris</i>
Field scabious	<i>Knautia arvensis</i>
Foxglove	<i>Digitalis purpurea</i>
Lady's bedstraw	<i>Galium verum</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Primrose	<i>Primula vulgaris</i>
Red clover	<i>Trifolium pratense</i>
Selfheal	<i>Prunella vulgaris</i>
Sweet violet	<i>Viola odorata</i>
Wild daffodil	<i>Narcissus pseudonarcissus</i>
Yarrow	<i>Achillea millefolium</i>

Grasses	
Common bent	<i>Agrostis capillaris</i>
Crested dog's-tail	<i>Cynosurus cristatus</i>
Meadow fescue	<i>Festuca pratensis</i>
Red fescue	<i>Festuca rubra</i>
Rough meadow-grass	<i>Poa trivialis</i>
Small timothy	<i>Phleum bertolonii</i>
Smooth meadow-grass	<i>Poa pratensis</i>
Sweet vernal-grass	<i>Anthoxanthum odoratum</i>
Yellow oat-grass	<i>Trisetum flavescens</i>