

Orchid Meadows, Nethergate Street, Hopton Preliminary Ecological Appraisal



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Summary of Key Issues

- Planning consent is being sought for conversion of a redundant barn and adjoining stables to residential accommodation. The Preliminary Ecological Appraisal for the development was carried out in February 2021
- The site is located just within 100m of a European protected site (Waveney and Little Ouse Valley Fen SAC) which may prompt a requirement for a Habitats Regulations Assessment (HRA). The site is also within the Impact Risk Zones of Weston Fen SSSI and Hopton Fen SSSI, and Natural England should be consulted
- The Bat Roost Potential of the buildings was assessed as very low and no evidence of bats or bat roosts was found
- Habitats within the planning application boundary have a moderate value as food sources, breeding habitat and shelter for wildlife, especially breeding birds
- Disturbance to breeding birds should be avoided by undertaking any vegetation and site clearance between September and February which is outside the breeding season.
- Opportunities for securing biodiversity enhancement include installation of swift and bat on the building and soft landscaping with plant species which benefit biodiversity.

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1 INTRODUCTION

1.1 Background

- 1.1.1 The owner is applying for planning consent to covert a small barn and stables at Hopton in Suffolk (TL98807918) to residential accommodation with gardens and an orchard.
- 1.1.2 A Preliminary Ecological Appraisal of the site is required as part of the planning submission and the owner commissioned Kepwick Ecological Services to carry out the ecological survey and appraisal in February 2021.

1.2 Objectives

- 1.2.1 The purpose of the Preliminary Ecological Appraisal is to:
- gather data on the existing ecological features of the site and immediate environs
 - evaluate the ecological features present
 - identify any potential ecological constraints to the proposed development
 - identify the need for further ecological surveys to inform an Ecological Impact Assessment
 - identify any mitigation measures likely to be required and Protected Species licensing requirements
 - identify opportunities for ecological enhancement to deliver Biodiversity Net Gain

1.3 Site context

- 1.3.1 The site is located on the south side of Nethergate Street to the north west of Hopton village centre. The surrounding land is predominantly arable, bisected by a low-lying linear area of fen habitats running south-west to north-east, close to the west boundary of the site.

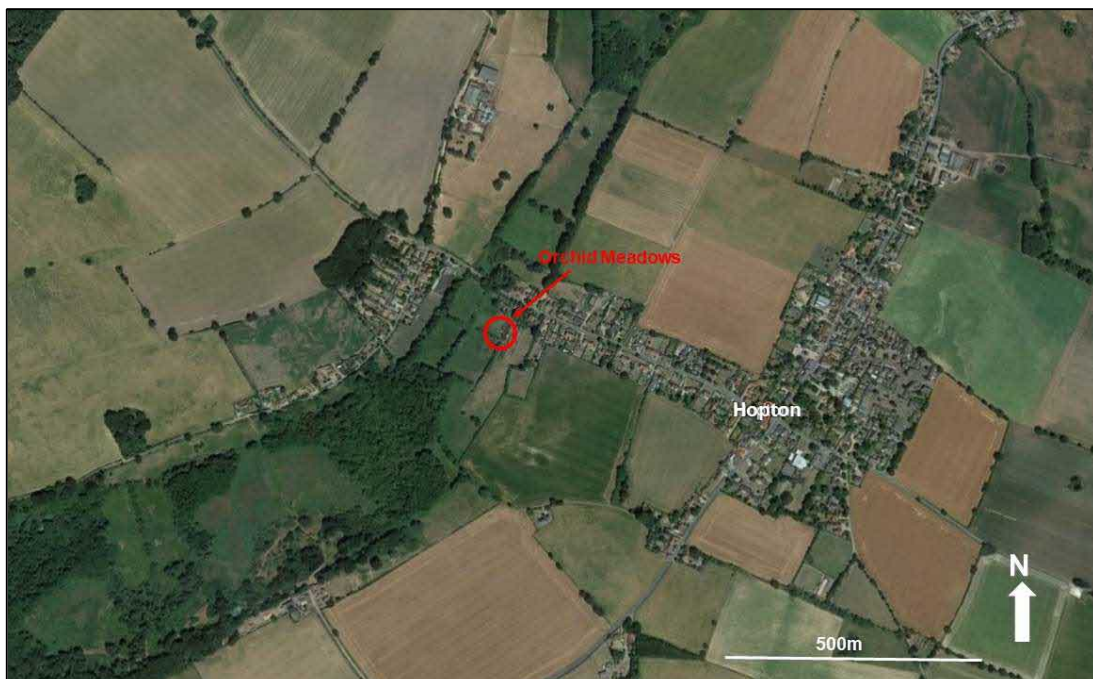


Figure 1. Aerial photo showing site location

2. METHODOLOGY

2.1 Desk study

2.1.1 A desktop study was undertaken to identify existing biological data and wildlife site designations relevant to the development site and immediate environs. Suffolk and Norfolk Biodiversity Information Services provided data on Species of Conservation Concern and statutory and non-statutory wildlife sites within a 2km radius.

2.1.2 Defra’s Magic Map (<http://www.magic.gov.uk>) was searched for European Protected Species mitigation (EPSM) licences and important areas for biodiversity within a 2km radius of the site.

2.2 Surveyor experience

2.2.1 The habitat survey and protected species assessment were carried out by Jane Harris MCIEEM, an ecologist with 25 years’ experience, who holds Natural England survey licences for bats (2015-11942-CLS-CLS and 2015-11494-CLS-CLS), great crested newts (2015-16239-CLS-CLS), and white-clawed crayfish (2016-19683-CLS-CLS).

2.3 Habitat survey

2.3.1 A habitat survey was undertaken on 24th February 2021. Habitat types within and adjacent to the site were identified and mapped. Features of ecological interest, flora and fauna were recorded. Plant nomenclature follows Stace (1997).

2.4 Protected species

Bats –Preliminary Roost Assessment and visual inspection

2.4.1 The buildings and any immediately adjacent trees were assessed for Bat Roost Potential (BRP) on 24th February 2021 following the Bat Conservation Trust’s guidance shown in Table 1.

Table 1: Assessing the potential suitability of a development site for bats (from Collins, 2016)

Suitability	Description of roosting habitats	Description of commuting and foraging habitat
Negligible	Negligible habitat features onsite likely to be used by roosting bats.	Negligible habitat features on-site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation.) A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or 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 (with respect to roost type only –the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.

High	A structure or 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, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. Site is close to and connected to known roosts.
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- 2.4.2 The exterior and interior of all the barn and stables were systematically inspected in daylight using a high-powered torch and close-focus binoculars where appropriate, to determine the potential for crevice-dwelling bats, e.g. gaps under roof tiles, double clad walls, cavity walls, cracks in timbers and brickwork, cracks around door and window frames. Locations of possible access points into the buildings were also recorded.
- 2.4.3 The internal environment, such as protection from drafts, temperature stability, humidity and light incursion was noted, together with the level of human disturbance. The assessment considered the potential for both summer and winter roosts.
- 2.4.4 The exterior and interior were searched for evidence of bat activity such as droppings, feeding remains, urine splashes, fur-oil staining and live or dead bats. All surfaces of the buildings, debris and stored items were searched and all accessible cracks and crevices suitable as roosting places were examined for the presence of bats using an endoscope or long-handled mirror.
- 2.4.5 All trees in the immediately adjacent to the buildings were inspected from the ground using close-focus binoculars. Features commonly used by bats for roosting and field signs of bats are listed below.

Table 2. Ground level Bat Roost Assessment of trees

Features of trees used by bats for roosting	Field signs of use by bats
Natural holes: knot holes, rot holes	Bat droppings near entrance
Woodpecker holes	Flies around entrance
Loose / flaky bark	Staining around entrance
Hollows / cavities resulting from damage or rot	Smoothing of surfaces around entrance
Cracks / splits in major limbs	Smell of bats
Crevices between intertwined boughs	Squeaking in warm weather –audible by ear and bat detector
Dense epicormic growth	
Dense ivy with crevices between the thick ivy stems and tree	

Reptiles

- 2.4.6 The habitats on site and in the immediate surrounding area were assessed for their potential to support reptiles.

Great crested newt

- 2.4.7 1:25 000 Ordnance Survey maps and aerial photographs were examined for the presence of ponds within 250m of the site which could support great crested newt. The great crested newt Habitat Suitability Index (HSI) is a quantitative measure of habitat quality (Oldham *et al.*, 2000). The simplified version adapted for the National Amphibian and Reptile Recording Scheme (NARRS) is recommended by Natural England for field use. Ponds within 250m of the barns are assessed by this method to determine their suitability to support great crested newts.

Riparian mammals

- 2.4.9 The habitats on site and in the immediate surrounding area were assessed for their potential to support water vole and otter.

Breeding birds and barn owl

- 2.4.10 All habitats on the site were assessed for their potential to support breeding (nesting) birds. Any active or old nests were recorded. The buildings were also searched for evidence of barn owls.

Assessment methodology

- 2.4.11 The assessment of ecological value and is based on the Guidelines for Ecological Impact Assessment (CIEEM 2018) and the Preliminary Ecological Appraisal is in accordance with the British Standard on Biodiversity (BS 42020:2013).

Limitations of the survey

- 2.4.12 The survey was carried out in early spring and some plant species would not be evident.

3 RESULTS

3.1 Desk study

Designated sites

- 3.1.1 Three statutory designated sites are within 2kms of the development site (Appendix 1). These are Weston Fen Special Site of Scientific Interest (SSSI) which is also part of the Waveney and Little Ouse Valley Fens Special Area of Conservation (SAC), Hopton Fen SSSI and Bugg's Hole Fen SSSI. The north boundary of Weston Fen is within 100m of the site.
- 3.1.2 Two Suffolk County Wildlife Sites (CWS) are also within the local area (Appendix 2). Hopton Meadow is an area of unimproved grassland which abuts the south boundary of the site. The Belt at Market Weston is a linear woodland located 1.8kms to south east. Four Norfolk CWS are located between 1.8 and 2kms from the site along the Norfolk /Suffolk county boundary (Appendix 2). They support fen, scrub, woodland and grassland habitats. One County Geological Site (CGS) in Gasthorpe Lodge disused quarry is also located in Norfolk approximately 1.9m from the site.

Species of Conservation Concern

- 3.1.3 There are numerous records of protected and notable species within the local area. Many of these are associated with the wetland habitats on Weston and Hopton Fens. Those which use buildings and are most relevant to the development are barn owl, swift, house sparrow and 7 species of bat (noctule, serotine, brown long-eared, common pipistrelle, soprano pipistrelle, Daubenton's, Natterer's). In addition, species which may use the habitats within the curtilage of the development or the adjoining habitats are Western hedgehog, brown hare, common toad and common frog. Several protected species have also been recorded on Weston Market Fen namely great crested newt, otter, badger and Desmoulin's water snail.
- 3.1.4 There is one historic European Protected Species Mitigation (EPSM) licence within a 2km radius of the site. This is at Gasthorpe, 2kms to the north west and for a brown long-eared resting site.

3.2 Habitats

3.2.1 The planning application site is shown in Figure 2 below and site photographs in Appendix 3.

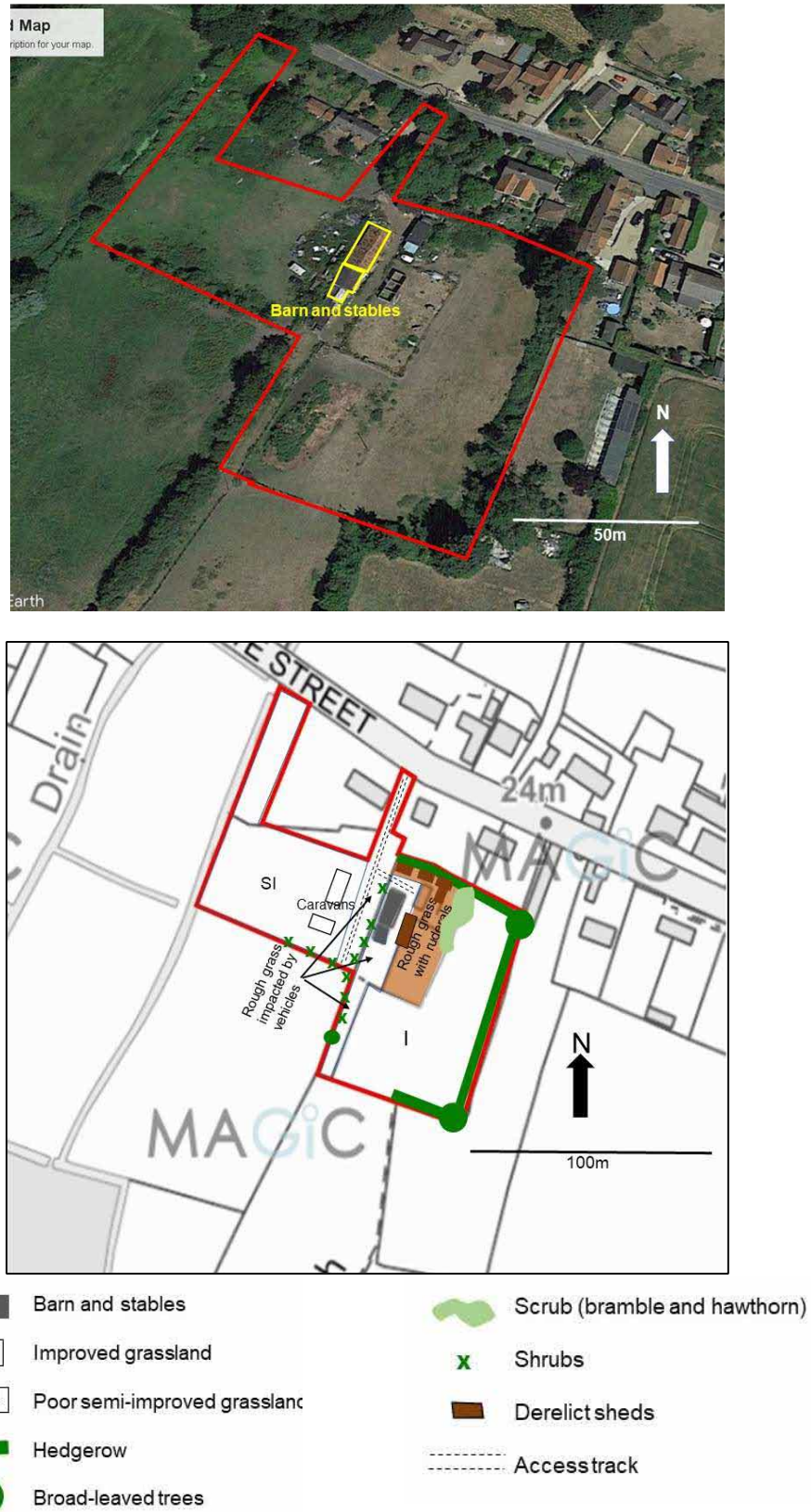


Figure 2. Aerial photo and Phase I habitat map with red line planning boundary.

Buildings and hardstanding (Phase I habitat classification J3.6)

- 3.2.2 The small barn and stables are located in the centre of the site. Two static caravans are situated on the west side of the buildings. The ecological potential of the barn and stables for bats, breeding birds and barn owls is assessed in section 3.3.

Improved grassland (Phase I habitat classification B4)

- 3.2.3 A block of improved grassland on the east of the buildings may be periodically grazed by horses. Closer to the barn, ruderal herbs such as nettle *Urtica dioica* and docks *Rumex* spp. have become established around stored materials and derelict sheds.

Poor semi-improved grassland (Phase I habitat classification B2.2)

- 3.2.4 The grassland to the west is also botanically poor, but the damper conditions support some herbs including creeping buttercup *Ranunculus repens*. The owner reported that orchid species are occasionally seen on the meadows closest to Weston Fen to the south of the development site.

Hedges and trees (Phase I habitat classification J3.1)

- 3.2.5 The hedgerows on the north and east boundaries comprises a limited number of native species, mainly hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, bramble *Rubus fruticosus* and elder *Sambucus nigra* and ivy *Hedera helix*. Two ash trees *Fraxinus excelsior* are established at the corners.

Scattered scrub (Phase I habitat classification A2.2)

- 3.2.6 The derelict sheds are interspersed with small thickets of bramble, elder and hawthorn. Individual hawthorns are located along the track on the west side of the barn.

Overall habitat assessment

- 3.2.7 The habitats within the red line boundary are of low ecological value, but the mosaic of grassland, hedgerow, ruderal herbs and scrub, interspersed with derelict sheds and debris are expected to provide food sources, shelter and breeding places for a variety of wildlife.

3.3 Protected species

Bats

- 3.3.1 *Bat Roost Potential (BRP):* the barn and stables comprised 3 sections; the barn at the north end, a central tack and food store and stables at the south end.



- 3.3.2 The north barn was constructed of brick and pantile with no double-clad areas apart from a small panel of weather boarding. It was in a poor state of repair with torn bituminous roof lining and missing ridge tiles. All the windows and doors were open or broken, allowing bat access. The interior was completely filled with stored items and could not be entered, but it could be viewed from the open doors and windows. The only potential roosting places in this section were under the remaining ridge tiles.



North barn

- 3.3.3 The central section was also constructed of brick and pantile with one flint panel. The roof was lined with breathable membrane but was in bad condition with most ridge tiles missing. The walls were single-clad. Bat access was possible through the roof and a broken window. Internally there was no ridge beam and no potential roosting places.



Central tack room and food store

- 3.3.4 A double stable was located at the south end and constructed of breeze blocks with a corrugated asbestos roof. The wooden cladding on the south gable end was tightly fixed with no gaps for bat access. The roof was not lined. Internally the walls were lined with hardboard but with no roosting places. Bat access was possible through the open stable doors and holes in the roof.



South stables

- 3.3.5 *BRP assessment:* the BRP of the buildings was assessed as very low due to the lack of double-clad structures and the poor state of the roof. The 2 ash trees on the site boundaries has negligible BRP.
- 3.3.6 *Visual inspection:* No evidence of bats roosts was found on the exterior of the buildings. The interior of the north section could only be viewed from the doorway. No evidence of bats was seen but there were numerous rat droppings and the environment was light and draughty. The central section and stables both had concrete floors and were easily accessed for inspection. They were regularly used and also light and draughty. No evidence of bats was found but rat droppings were scattered throughout.
- 3.3.7 *Foraging and commuting:* the neighbouring fen habitats support 7 species of bats, some of which may also forage around the development site. The habitat features of most importance for bats are the boundary hedgerows and hedgerow trees.

Reptiles

- 3.3.8 The site has low potential for reptiles close to the buildings due to the level of disturbance and short vegetation, but the rough grassland, ruderal herbs and scrub around the derelict sheds would provide shelter and foraging opportunities. The damper semi-improved grassland to the west has higher potential for grass snakes which may be present in the neighbouring fen habitats.

Great crested newts and other amphibians

- 3.3.9 There were no extant ponds on the 1:25000 OS maps within 250m of the development site. There is potential for common toad in the grassland and scrub surrounding the derelict sheds,

Terrestrial mammals

- 3.3.10 Western European hedgehog may forage on the site which provides summer and winter refuges, especially amongst the rough grassland, scrub and derelict sheds. Brown hares may use the site but are unlikely to shelter or breed close to the buildings. [REDACTED]

Riparian mammals

- 3.3.11 The boundary ditches to the west are the only water bodies near the site, but they are overgrown with reed and unlikely to support water voles (Photograph in Appendix 3). Otters may range over the site from neighbouring wetland habitats, but do not use it for shelter or breeding.

Breeding birds and owls

- 3.3.12 There was no evidence of barn owls or other owl species in the buildings. No old nests were recorded but the buildings could be used by breeding birds. The derelict sheds scrub and hedgerows are very likely to support breeding birds.

4 IMPACT ASSESSMENT

4.1 Project description

- 4.1.1 No detailed plans are available to inform this assessment, but it is understood that the planning proposal will be for conversion of the buildings to residential accommodation with access, parking, gardens and an orchard. This is likely to involve demolition of at least part of the buildings and site clearance.

4.2 Potential impacts

Designated sites

- 4.2.1 The development site is located within 100m the Waveney and Little Ouse Valley Fen SAC. This is a European protected site, and Natural England and Suffolk County Council should be consulted to determine if there is a requirement for a Habitats Regulations Assessment (HRA). The site also falls within the Impact Risk Zones (IRZ) of nearby Sites of Special Scientific Interest (SSSI), namely Weston Fen and Hopton Fen. The proposed development is within the IRZ category of "All planning applications" the local planning authority is required to consult with Natural England over the impacts of the development on these sites.

Habitats

- 4.2.2 The proposed development is expected to impact on the habitats close to the buildings through site clearance, disturbance and vehicular access. These habitats are of low ecological value. The grassland to the south and west and the boundary habitats are of higher ecological value, but are unlikely to be affected by the works.

Protected species

- 4.2.3 Potential impacts on protected species are summarised below:

Species	Likelihood of presence on site	Potential impacts
Bats	<ul style="list-style-type: none"> • Very low roost potential in buildings • Medium potential for foraging • No roost potential in trees 	<ul style="list-style-type: none"> • Removal of hedgerows will reduce foraging opportunities • Any external lighting of the dwellings will have negative impacts on light-averse bats
Reptiles	Low	<ul style="list-style-type: none"> • Possible killing and injury during site clearance
Great crested newts	Negligible	Non expected
Otter	Negligible	None expected
Water vole	Negligible	None expected
Breeding birds	<ul style="list-style-type: none"> • Medium potential in buildings • High potential in hedgerow, scrub and derelict sheds 	<ul style="list-style-type: none"> • Works to buildings during the breeding season may disturb breeding birds and damage nests • Vegetation removal and site clearance may disturb breeding birds and damage nests
Barn owls	Negligible	None expected

4.3 Relevant legislation

Breeding birds

- 4.3.1 Wild birds, their young, eggs, and their nests whilst in use or being built, are protected under the Wildlife and Countryside Act 1981 (as amended).

5 RECOMMENDATIONS

Ecological mitigation

5.1 Measures to mitigate the ecological impacts of the proposed development are summarised below.

Feature	Mitigation measures	Further surveys
Habitats	<ul style="list-style-type: none"> • Minimise loss and damage to surrounding grassland habitats • Retain hedgerow and trees with particular value as pollen and nectar sources • Soft landscaping and planting to compensate for loss of biodiversity 	None
Breeding birds	<ul style="list-style-type: none"> • Site/vegetation clearance to be between September and February to avoid the bird breeding season • If any nests are found during the works, stop work in that area until the young have fledged. 	None

Ecological enhancement

5.2 The following measures would secure a level of ecological enhancement:

- Install bat boxes on the building
- Install swift and house sparrow boxes on the building
- Soft landscaping to comprise native species or garden cultivars selected for their known value to wildlife, including trees, shrubs, climbers and herbaceous plants which provide food sources throughout the year
- Management of the boundary hedgerows to benefit wildlife
- Create a new pond fed with rainwater run-off from the buildings

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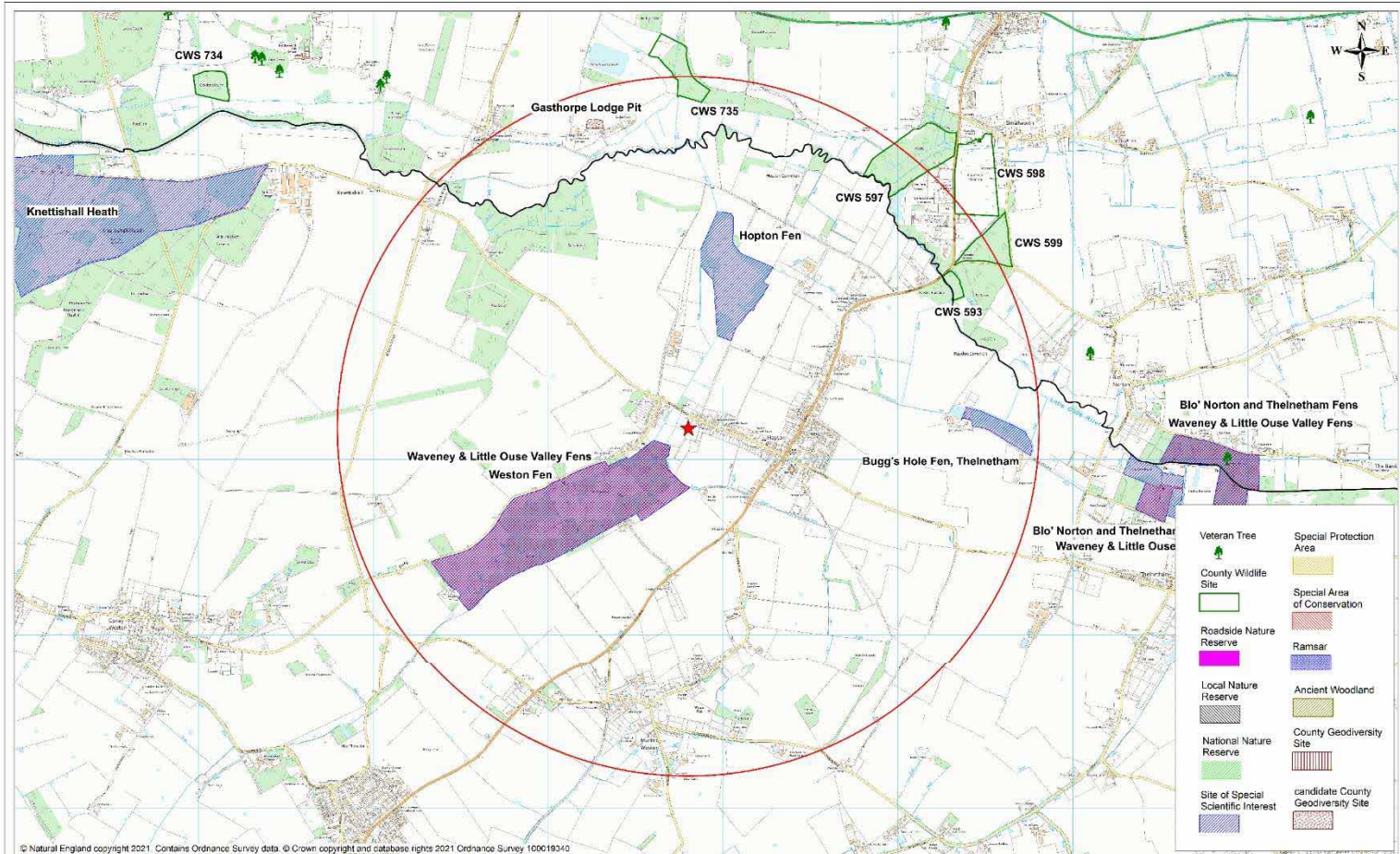
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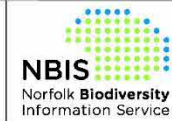
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Appendix 1. Designated sites and Norfolk County Wildlife Sites within 2km radius

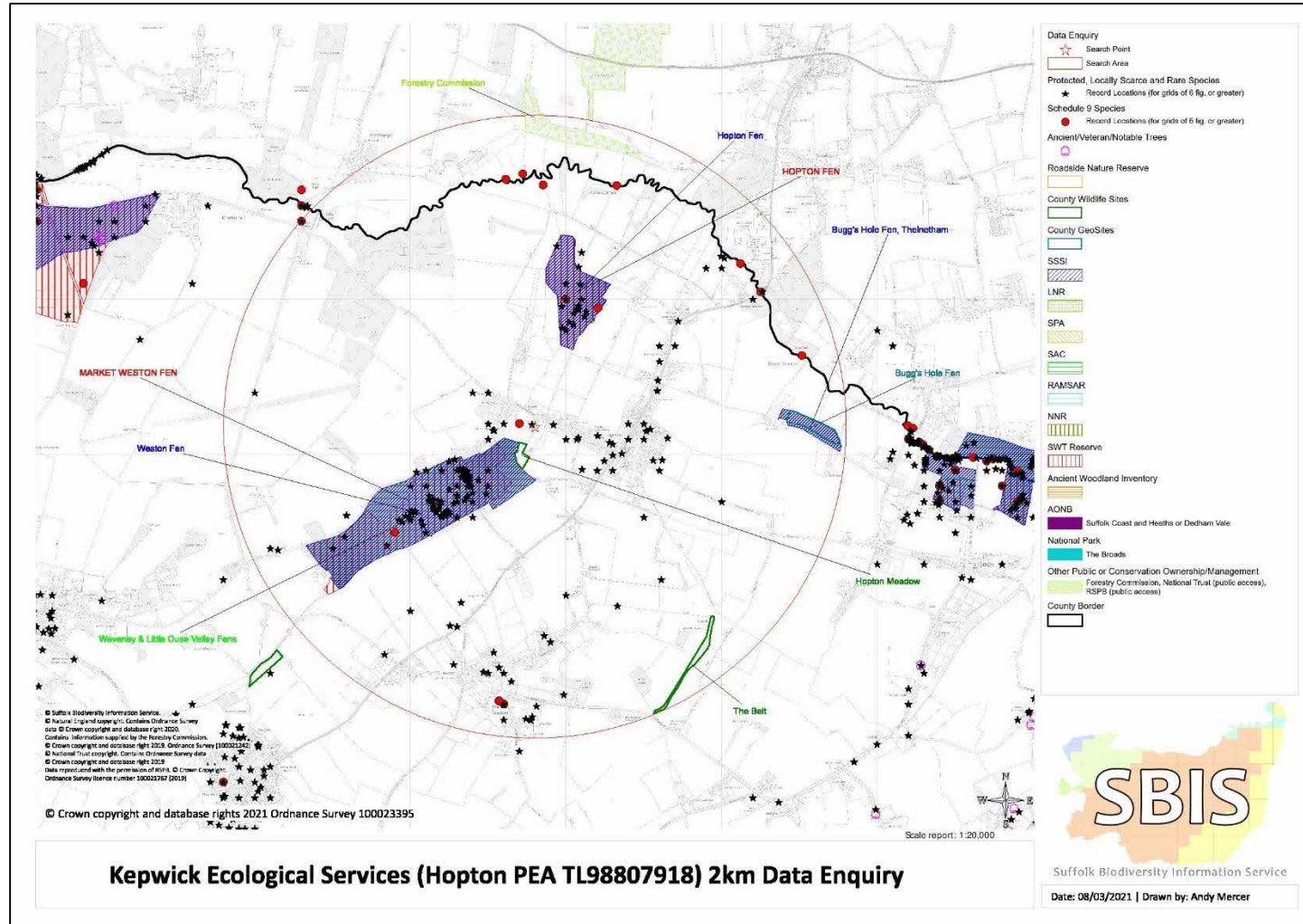


2km Data Search Around TL9880 7918, Hopton
 for Kepwick Ecological Services
 Scale 1:20000
 Compiled by L. Oddy on 9 March 2021



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Appendix 2. Designated sites, Suffolk County Wildlife Sites and protected species records within 2km radius



Appendix 3. Site photographs



Barn and stables north end



Barn and stables south end



Rough grass/ruderals/debris and improved grassland to east



Stored materials to east of buildings



Derelict sheds of north of buildings



Derelict sheds to east of buildings

Appendix 3. Continued



Site access from Nethergate street



Access to caravans on west side of buildings



Ditches on west boundary