



**Glaven Ecology**



**Land at  
Thwaite Common  
Erpingham**

**Ecological Impact  
Assessment**

**Prepared by  
Glaven Ecology**

**on behalf of  
Pike Partnership**

April 2021

Reference: 2124-GE-PP

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Version	Status	Changes	Date	Author
1.1	Draft		07/04/2021	Carolyn Smith BSc (Hons), MCIEEM
1.2	Draft	Maps added	08/04/2021	Carolyn Smith BSc (Hons), MCIEEM
1.3	Issued	Reviewed	09/04/2021	Carolyn Smith BSc (Hons), MCIEEM

*The data contained within the report are accurate to the best of our knowledge and have been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.*

*The report conforms to the British Standard 42020:2013 Biodiversity – Code of practice for planning and development.*

*We confirm that any opinions expressed are our best and professional true opinions. This report has been prepared by an ecology specialist and does not purport to provide legal advice.*

# 1 Summary

- 1.1 Glaven Ecology was commissioned to undertake an ecological assessment on land north of Thwaite Common, Erpingham, NR11 7QG. The survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 06<sup>th</sup> April 2021.
- 1.2 Planning is sought to construct a self-heating house on land currently used as storage and a tennis court.
- 1.3 The site sits within a SSSI Impact Risk Zones for Gunton Park Lake. However, the proposal does not fall within the categories requiring further consultation with Natural England.
- 1.4 The site comprises approximately 3.6 Ha of broadleaved woodland plantation, amenity grassland and hardstanding/tennis court. Within this the development plot is approximately 0.2Ha on the existing hardstanding and tennis court.
- 1.5 No further surveys for protected species are required.
- 1.6 Mitigation measures recommended include
  - Timing of works to the trees on site and for the creation of the new access track/ride.
  - any, trenches or holes created during the works must be backfilled at the end of the day or covered overnight and other good work practices.
  - External lights associated with the lodges should use warm white lights at <2700k.
  - Wildflower meadow and pond creation and enhancement of the understory of the woodland.
- 1.7 Based on successful implementation of mitigation measures and other safeguards, no significant adverse effects are predicted as a result of the proposed.
- 1.8 Including the enhancements suggested in the landscaping scheme the project has the potential to provide up to 44% Biodiversity Net Gain.
- 1.9 Further enhancements recommended for the site include the installation of bat and bird boxes (to include a barn owl box if possible) and creation of a log pile habitat for amphibians and reptiles.

## 2 Introduction

### 2.1 Background

2.1.1 Glaven Ecology was commissioned to undertake an ecological assessment on land north of Thwaite Common, Erpingham, NR11 7QG. The survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 06<sup>th</sup> April 2021.

2.1.2 This survey and report aim to establish the baseline ecology of the site and its suitability to support any protected species. It assesses potential impacts on these features as a result of the works and advises on the need for further surveys. It sets out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects

### 2.2 Site Location and Description

2.2.1 The site was located at OS Grid Reference TG 2007 3250 (Appendix 1) and the ownership boundary is approximately 3.6 Ha of broadleaved woodland plantation, amenity grassland and hardstanding/tennis court. Within this the development plot is approximately 0.2Ha on the existing hardstanding and tennis court (Appendix 2).

2.2.2 Thwaite Common lies to the south of the site with areas of lowland fen, lowland meadow and semi-improved grassland. The wider environment area was dominated by arable land.

### 2.3 Project Overview

2.3.1 Planning is sought to construct a self-heating house on land currently used as storage and a tennis court.

## 3 Legislation and Planning Policy

3.1.1 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 and their nests and eggs.

3.1.2 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 2010, these Regulations, together with subsequent amendments, were consolidated into The Conservation of Habitats and Species Regulations 2010.

3.1.3 The North Norfolk District Council Local Plan - Policy EN9 - states that all development proposals should:

- protect the biodiversity value of land and buildings and minimise fragmentation of habitats; maximise opportunities for restoration, enhancement and connection of natural habitats; and incorporate beneficial biodiversity conservation features where appropriate.

### 3.1 Amphibians & Reptiles

3.1.1 Amphibians and Reptiles such as the common lizard, adder, slow-worm and grass snake are protected under the Countryside and Wildlife Act 1981 (as amended), which prohibits the intentional killing and injuring and trade.

### 3.2 Birds

3.2.1 All birds, their nests and eggs are protected by law under Part 1 of the Wildlife and Countryside Act 1981 (as amended).

### 3.3 Bats

3.3.1 All UK bat species are protected under The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). This legislation fully protects bats and their breeding sites or resting places, making it an offence to deliberately capture, injure or kill bats, deliberately disturb bats, damage or destroy a bat breeding or resting place.

## 4 Survey Methods

### 4.1 Desk Study

- 4.1.1 Records held on Magic.gov.uk on Designated Sites and granted European Protected Species Licences were reviewed in April 2021.
- 4.1.2 A data search from Norfolk Biodiversity Information Service (NBIS) with a 2km zone of influence was conducted in April 2021 to inform baseline ecology of the site and surrounding area.
- 4.1.3 The types of features considered within the desk study includes designated sites, habitats and species of principal importance for conservation of biodiversity and protected species,

### 4.2 Field Survey

- 4.2.1 A brief Phase 1 habitat survey of the site was conducted using the methodology to describe habitats as laid down in NCC (1990) and an assessment made for the presence of protected species.
- 4.2.2 The survey was undertaken by Carolyn Smith BSc (Hons) (Natural England Level 1 Licence for bats [reference 2018-34461-CLS]; Great Crested Newts [reference 2017-29746-CLS-CLS] and barn owl class licence [reference CL29/00568]) on 06<sup>th</sup> April 2021.
- 4.2.3 The weather was dry and overcast at the time of the survey, 8°C and breezy.

### 4.3 Protected Species

#### Amphibians and reptiles

- 4.3.1 The habitat was assessed for reptiles and amphibians and suitable materials were lifted to check for signs of reptiles.
- 4.3.2 Eight ponds within 500m of the site were appraised for their suitability for great crested newts using the Habitat Suitability Index (HSI). The HSI is an indicative tool used to rate the suitability of water-bodies for great crested newts. A total of ten characteristics and features of water-bodies, such as their size, water quality, shading and vegetation cover are assessed and classified according to prescribed criteria. These scores allow the HSI to categorise water-bodies into one of five ratings which indicate their suitability for

occupation by great crested newts. The five categories are excellent, good, average, below average and poor.

### **Birds**

4.3.3 Evidence of nesting birds was searched for and the site was assessed as to its potential to support nesting birds.

### **Bats**

4.3.4 A general assessment was made of the suitability of site features for roosting, commuting and foraging bats and the likely presence of bats within the site area.

4.3.5 The trees within the site boundaries were assessed for their potential to support roosting bats. The survey work was completed in accordance with Bat Conservation Trust's "Bat Surveys for Professional Ecologists" (Collins, 2016).

### **Badger**

4.3.6 The habitats on site and in the immediate surrounding area were assessed for their potential to support badgers.

4.3.7 Evidence of badger activity (including setts, footprints, latrines, trails, scratching posts, guard hairs and foraging activity) was searched for within the site.

4.3.8 Table 1 shows the criteria used when assessing the likelihood of a protected species being present within the survey area:

*Table 1: Criteria considered when assessing the likelihood of occurrence of protected species*

Assessment Category	Criteria
Present	Species are confirmed as present from the current survey or historical confirmed records.
High	Habitat and features of high quality for species/species assemblage. Species known to be present in wider landscape. Good quality surrounding habitat and good connectivity.
Moderate	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat/ecological conditions required by the species/assemblage. Within known national distribution of species and local records in desk study area. Limiting factors to suitability, including small area of suitable habitat, some severance/poor connectivity with wider landscape, poor to moderate habitat suitability in local area.
Low	Habitats within the survey area poor quality or small in size. Few or no records from data search. Despite above, presence cannot be discounted as within national range, all required features/conditions present on site and in surrounding landscape. Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited poor quality habitats and features. No local records from desk study; site on edge of, or outside, national range. Surrounding habitats considered unlikely to support species/species assemblage.

## 4.4 Evaluation and Assessment

4.4.1 Ecological features are evaluated and assessed with due consideration for the Chartered Institute of Ecology and Environmental Management (CIEEM) 2019 Guidelines for Ecological Impact Assessment (EclA).

4.4.2 The following the impact magnitude categories and criteria will be used:

- Major negative effect – that which has a harmful impact on the integrity of a site or the conservation status of a population of a species within a defined geographical area (e.g. fundamentally reduces the capacity to support wildlife for the entirety of a conservation site or compromises the persistence of a species' population).
- Intermediate negative effect – that which has no adverse impact on the integrity of a conservation site or the conservation status of a species' population but does have an important adverse impact in terms of achieving certain ecological objectives (e.g. sustaining target habitat conditions and levels of wildlife for a conservation site or maintaining population growth for a species).



- **Minor negative effect** – some minor detrimental effect is evident, but not to the extent that it has an adverse impact in terms of achieving ecological objectives.
- **Neutral effect** – that which has no predictable or measurable impact.
- **Positive effect** – that which has a net positive impact on an ecological receptor.

## 4.5 Survey Limitations

4.5.1 The NBIS data search is not an exhaustive record of species within the area and an absence of records does not preclude an absence of species. However, when assessed in conjunction with a field survey, they can contribute to a robust ecological assessment of a site.

4.5.2 The survey was completed during the sub-optimal survey period for undertaking botanical surveys thus limiting the identification of ground flora species.

## 5 Baseline Ecological Conditions

### 5.1 Designations

5.1.1 No Statutory Designated Sites were identified within 2km of the site via the NBIS search and MAGIC maps, but two non-Statutory Designated sites were identified (Table 2, Appendix 2).

5.1.2 The site sits within a SSSI Impact Risk Zones for Gunton Park Lake. However, the proposal does not fall within the categories requiring further consultation with Natural England: *Large infrastructure projects; livestock units of over 500m<sup>2</sup>.*

**Table 2: Statutory Designated Sites within 2km of development site**

Site name and Designation	Site Name and description	Distance from site
Thwaite Common Country Wildlife Site (CWS) 1119	A large area of species-rich grassland with blocks of scattered scrub.	20m south
Calthorpe Grazing Meadow CWS 1118	This site is semi-improved marshy neutral grassland.	1500m north west
Icehouse Grove CWS 1140	This site is comprised of wet semi-natural broad-leaved coppice with standards woodland, marshy neutral grasslands, fen and mesotrophic ponds.	1800m north
Thurgarton Woods CWS 1139	A mature broadleaved coppice with standards woodland.	1900m north
Fen Plantation CWS 1182	An old broad-leaved woodland which was felled and replanted about 50 years ago. The coppice layer and ground flora have maintained a fine diversity on wet ground.	1900m north east

## 5.2 Habitats and Flora

### Notable Flora Records

5.2.1 NBIS held no records of notable plant species from within the survey site or the 2km search area.

5.2.2 Invasive plants such as Japanese knotweed, Himalayan balsam and giant hogweed were not recorded within the site.

### Habitats

5.2.3 The site was a total of 3.6 Ha of broadleaved woodland plantation, amenity grassland and hardstanding/tennis court. Within this the development plot is approximately 0.2Ha on the existing hardstanding and tennis court (Figures 1 and 2). (Other site photos can be found in Appendix 4).

5.2.4 A Phase 1 habitat map can be found in Appendix 5.



**Figure 1: Hardstanding and tennis court (to right).**



**Figure 2: Amenity grassland looking west towards tennis court.**

#### **A1.1.2 Broadleaved woodland - plantation**

5.2.5 There were two areas of woodland plantation within the ownership boundary. Both woodlands appeared to consist of trees of a single age structure.

5.2.6 The tree species in both stands was limited with species including ash *Fagus sylvatica*, field maple *Acer campestre* and oak *Quercus robur*. There was one mature oak along the southern boundary of the site.

5.2.7 The ground flora in both areas was very sparse, with nettle *Urtica dioica* and dock *Rumex obtusifolius* being the predominant plants.

#### **A3.1 Scattered trees**

5.2.8 There was a single line of same-age trees planted along the boundary between both amenity grasslands.

### J1.2 Amenity Grassland

5.2.9 There were two areas of short, mown amenity grassland. One to the east of the development boundary and one to the north. Both areas were lush green, suggestive of intensively managed grass.

5.2.10 Both areas had a very limited sward composition with grass species included Yorkshire fog *Holcus lanatus*, creeping bent *Agrostis stoloniferous* and perennial rye grass *Lolium perenne*.

5.2.11 There were few other herbs present. Those recorded were nettle, cat's ear *Hypochaeris radicata*, dandelion *Taraxacum agg. sp.*, daisy *Bellis perennis*, and buttercup *Ranunculus repens*.

### J3.6 Buildings

5.2.12 There was a single storey outbuilding to the west of the tennis court.

5.2.13 The out-building was on single layer wooden panels and had a bitumen lined roof and was used as storage.

### J4 Bare Ground

5.2.14 The central area within the development boundary was concrete hardstanding and a tennis court.

## **5.3 Fauna**

### Amphibians

5.3.1 There was one class licence return from 2014 for great crested newt presence 1600m south west of the site.

5.3.2 The NBIS search returned two great crested newt records approximately 500m west of the site, both records were relatively old from 2011.

5.3.3 The local Toad Patrol however, recorded 4 great crested newts in their 2021 patrol, all within the pond adjacent to Thwaite Hall, 600m west of the site. In email correspondence

with the report author, the organiser of the toad patrol, said that the newts all move to the pond from the south across the common.

5.3.4 The development site offered sub-standard habitat for this species being predominantly hardstanding and the tennis court.

5.3.5 The grass within the ownership boundary was of sub-standard habitat being regularly mowed and of little value for foraging.

5.3.6 The woodlands offered some suitable habitat for the terrestrial phase of the great crested newts as well as other amphibians such as toads. However, the woodland to the south of the tennis court lacks any sort of ground flora and the opportunities for sheltering here are poor.

5.3.7 There were 13 ponds within 500m of the site, all to the south and many associated with Thwaite Common. Eight of the ponds were assessed during the survey (Table 3, Appendix 6).

*Table 3: Pond assessment within 500m of the site*

Pond number	Description	Distance from site boundary	HSI Score
1	Pond on the northern edge of Thwaite Common. No shading, surrounding habitat of tussocky grassland.	75m south east	0.78 - Good
2	Pond on the north eastern edge of Thwaite Common. No shading, surrounding habitat of tussocky grassland with some shrubby cover on the eastern side and other shrubs close to the south.	360m south east	0.75 – Good
3	Set within a more managed area in private land, with short grass but a good variety of shrubs to the north and east.	430m east	0.68 – Average
6	Set in maintained private grounds this pond had waterfowl present with few low shrubs for cover.	500m south east	0.55 – Below average
7	An open pond to the south of The Street with good macrophyte cover.	380m south east	0.70 – Good
11	Set next to the road and heavily shaded this was a small pond.	240m south	0.54 – Below average
12	Set within a field this was an open pond with no shading and no shrubs or cover.	200m south west	0.55 – Below average
13	A large pond in the north of Thwaite common with little shading, but some cover vegetation to the south.	170m west	0.73 - Good

5.3.8 The woodland to the east offered some suitable sheltering opportunities but the woodland to the south was poor quality habitat. The amenity grassland was sub-standard habitat and within the development it was hardstanding, in use as parking, and a tennis court. It was assessed that the likelihood of great crested newt presence within the development boundary was **negligible**

#### Reptiles

5.3.9 There were no records returned by NBIS within the last ten years of reptiles within 2km of the site.

5.3.10 There was limited potential for reptiles to be present on site, with only the woodland offering sheltering potential. The amenity grassland offered little in the way of foraging opportunities for these species.

5.3.11 The likelihood of reptiles being present on site was assessed as **negligible**.

#### Birds

5.3.12 There were 261 records of birds within 2km of the site, comprising of 79 different species with the majority of records from the Gunton Park, Alby areas.

5.3.13 The nearest record of a Schedule 1 bird was a barn owl in Erpingham approximately 600m east of the site.

5.3.14 Nesting opportunities on site would be limited to common species within the trees in the woodland areas.

5.3.15 No sign of bird nests, old or new, were observed within the development boundary, with no nesting opportunities noted.

5.3.16 The likelihood of nesting birds within the development boundary is assessed as **negligible**.

#### Bats

5.3.17 NBIS data returned 358 records of bats within 2km, notable species included *Barbastelle* *Barbastella barbastellus* and natterer's *Myotis nattereri*. The closest records were of brown long-eared *Plecotus auritus* 250m west of site.

5.3.18 There was one record of a granted European Protected Species Mitigation Licence (2015-13753-EPS-MIT) 1700m north west of the site. The licence was for the destruction of a resting place for brown long-eared, common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus*.

5.3.19 The majority of trees within the woodlands were of a similar age, being plantation woodland. A few in the eastern woodland had broken branches, but these were thin and offered no crevices suitable for roosting. No trees in the woodlands were assessed as having any potential roost features.

5.3.20 There was a wooden outbuilding next to the hardstanding and tennis court. This was single-storey with a bitumen roof, used for storage. There were no roost features noted and no access points into the building. The building was heavily disturbed by human activity. The out-building was assessed as having negligible potential to support roosting bats,

5.3.21 There is the likelihood that bats cross the site whilst commuting but the likelihood of bats being present within the development boundary is **negligible**.

#### Badgers

5.3.22 There were no recent records of badgers within 2km of the site.

5.3.23 The site did not provide suitable habitat for sett creation and provided little in the way of foraging habitat.

5.3.24 No evidence of badgers such as latrines, snuffle holes, mammal runs, or badger dung found was found during the survey.

5.3.25 The likelihood of foraging badgers being occasionally present within the site is **negligible**.

## 6 Assessments of Effects

### 6.1 Site proposals

6.1.1 Proposals at the Site comprise the following:

- Erection of a self-heating house on the land currently used as storage/parking and a tennis court.
- There is an existing trackway to the site from the road, although plans are to create a new access/ride through the trees to the south of the tennis court.
- Landscaping plans include the creation of wildflower meadows in place of the amenity grassland, pond creation and enhancement of the woodlands to create a more diverse structure and habitat for wildlife.

### 6.2 Assessment of Likely Significant Effects

#### Gunton Park Lake SSSI

##### *Predicted Effects*

No potential pathways of impact are anticipated on the Designated Site given the scale of the development and the distance to the Designated Site.

#### Habitats and Flora

##### *Predicted Effects*

6.2.1 The grassland is of low botanical and ecological importance providing very little in the way of foraging habitat for wildlife. It has a very low herb presence making it poor foraging for pollinators and invertebrates.

6.2.2 Some trees within the woodland to the south of the tennis court will be felled to allow for the new driveway.

6.2.3 A short stretch, approximately 20m, of tree line will be removed to allow for the construction of the house.

6.2.4 An intermediate negative effect is predicted at the Local level.



### *Mitigation Measures*

- 6.2.5 The woodland to the south of the tennis courts will be enhanced with undergrowth planting to increase biodiversity interest. New planting to include hazel and holly, as well as a wildflower mix on the new access track/ride.
- 6.2.6 The creation of wildflower meadows to the east and north of the new house, in place of the amenity grassland, will increase foraging potential for pollinators and other invertebrates which in turn will make the area more attractive to other species.
- 6.2.7 New hedgerow planting, approximately 200m, has already taken place along the northern boundary of the site.

### *Residual Effects*

- 6.2.8 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.
- 6.2.9 Including the enhancements suggested in the landscaping scheme the project has the potential to provide up to 44% Biodiversity Net Gain (Appendix 7).

### Fauna

#### Amphibians

##### *Predicted Effects*

- 6.2.10 The hardstanding and tennis court have no value to these species and the amenity grassland is of sub-standard habitat for foraging.
- 6.2.11 There will be creation of an access track through the woodland to the south of the tennis court, however this lacks any sort of ground flora and the opportunities for sheltering here are poor.
- 6.2.12 All ponds within 250m of the site were subjected to the Natural England Rapid Risk Assessment (Natural England, 2020). Due to the small amount of sub-standard habitat being disturbed by the works, and the rest being hardstanding, all ponds gave a result of 'Green: Offence Highly Unlikely'.

6.2.13 This indicates that the development activities are of such a type and scale that it is highly unlikely any offence would be committed should the development proceed.

6.2.14 A minor negative effect is predicted at the Local level.

#### *Mitigation Measures*

6.2.15 All works to the woodland to create the new track will be undertaken outside the amphibian hibernation period (avoiding November to February, inclusive).

6.2.16 All works materials will be stored on pallets. This will prevent places of refuge being created within the construction area.

6.2.17 Any aggregates delivered to site should be stored in bulk-bags and placed on pallets. Again, this will prevent places of refuge / hibernacula being created within the construction zone.

6.2.18 All waste should be stored in skips prior to removal from site.

6.2.19 All excavations (i.e. footings) should be covered / back filled each evening to prevent foraging or commuting amphibians from falling in and becoming trapped. If this is not possible then an escape ramp – made from earth or wooden sticks – will need to be placed within each excavation.

6.2.20 The woodland will be planted with an enhanced undergrowth to increase the suitability of the habitat for the terrestrial phase of amphibians.

6.2.21 The creation of wildflower meadows to the east and north of the new house with a much reduced mowing regime to the current amenity grassland will increase the suitable foraging habitat on site for amphibians.

6.2.22 Landscaping plans also include the creation of a new pond in the eastern meadow.

#### *Residual Effects*

6.2.23 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

## Reptiles

### *Predicted Effects*

6.2.24 There are limited sheltering opportunities on site, with the grass adjacent to the development area being of sub-standard habitat for reptiles. There were no records within 2km of the site.

6.2.25 The mitigation put in place for amphibians will also benefit reptiles.

6.2.26 As such no significant adverse effects or legal infringements are predicted.

## Birds

### *Predicted Effects*

6.2.27 There were no old birds nest noted but the trees within the small woodland where the track is to be created does offer nesting opportunities.

6.2.28 During site clearance there is the risk of killing and injuring nesting birds, damaging their nests or eggs, as a result of vegetation clearance. In the absence of mitigation an intermediate adverse effect is predicted at the Local level.

### *Mitigation Measures*

6.2.29 To avoid committing an offence under the Wildlife and Countryside Act 1981 (as amended), any vegetation clearance will take place outside of the bird nesting period (i.e. outside of March to August), or failing that, following confirmation by a suitably qualified ecologist that nesting birds are absent from the habitats to be cleared.

6.2.30 The above could be secured by an appropriately worded planning condition and/or intrinsic design measures.

### *Residual Effects*

6.2.31 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

## Bats

### *Predicted Effects*

6.2.32 There was negligible roost potential within the site, however commuting bats may cross the site or exploit site boundaries.

6.2.33 It is unlikely that bats will be present on site and only in low numbers as they commute through the site, therefore neutral effects are predicted.

### *Mitigation Measures*

6.2.34 External lights associated with the new house should be of a low light level to further minimise impacts on bats that might forage and commute in the vicinity and not light up any tree canopies.

6.2.35 Warm white lights should be used at <2700k. This reduces the ultraviolet component or that has high attraction effects on insects which can lead to a reduction in prey availability for some light sensitive bat species.

### *Residual Effects*

6.2.36 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

## Badgers

### *Predicted Effects*

6.2.37 There was no suitable habitat for setts and foraging opportunities were limited.

6.2.38 No significant adverse effects or legal infringements are predicted.

### Summary of Effects

6.2.39 Table 3 below summarises the assessment of effects, including any mitigation and subsequent residual effects.

**Table 3: Summary of effects**

<b>Ecological Factor</b>	<b>Likely Significant Effect and/or Legal Implication (before mitigation)</b>	<b>Avoidance &amp; Mitigation Measures</b>	<b>Mechanism by which Mitigation is Secured</b>	<b>Residual Effects (after mitigation)</b>
Designated sites	No significant effects	-	-	No significant effect
Habitats and flora	Intermediate negative effect at Local level.	Enhanced undergrowth planting of woodland Creation of two wildflower meadows. New hedgerow planting	-	No significant effect
Amphibians	Minor negative effect at the local level.	Timing of works Good working practices Habitat enhancement and creation.	-	No significant effect
Reptiles	No significant effects	-	-	No significant effect
Birds	Potential damage or destruction of nests and eggs	Sensitive timing of works/nest checks by ecologist	Legal requirement; secured via planning permission	No significant effect
Bats	Neutral effect	Low level lighting scheme.	-	No significant effect
Badgers	No significant effects	-	-	No significant effect

## 7 Enhancements

7.1 The Local Planning Authority has a legal duty to consider enhancements on proposed development sites. Furthermore, the National Policy Planning Framework (NPPF) requires planning decisions to aim to promote net gains in biodiversity on development sites.

7.2 The following enhancements are suggested for the site:

- Four bat boxes to be installed on the trees on the woodland edge to the east of the site. Boxes should be placed at least 3m high where there is a clear flight path for bats entering and leaving. The [2FN Schwegler bat box](#) or similar would be suitable.
- Install four bird boxes on trees around the site boundaries. Suitable boxes include the [Schwegler 1B nest box](#) and the [robin and wren FSC nest box](#).
- Consideration should be given to installing a barn owl box along the northern boundary facing the adjacent arable field. This can either be on a tree or, as last resort, a pole mounted box.
  - A suitable tree would be:
    - a mature tree with a thick trunk.
    - with a high canopy.
    - with few or no low branches.
    - where a nest box can be placed at least 3 metres above ground level.
    - where the nest box access hole would be visible to a passing owl, even when the tree is in full leaf and seen from a distance.
    -
- Some logs from the tree removal for the access track should be used to create a log pile habitat for reptiles and amphibians.
  - Place the logs within an area that will get good sun to allow for basking (suggested location north eastern end of the east meadow).
  - Dead wood attracts insects on which amphibians and reptiles will feed.
  - Allow vegetation to grow around and through the log pile to provide more shelter and to increase the variety of insects attracted to it.

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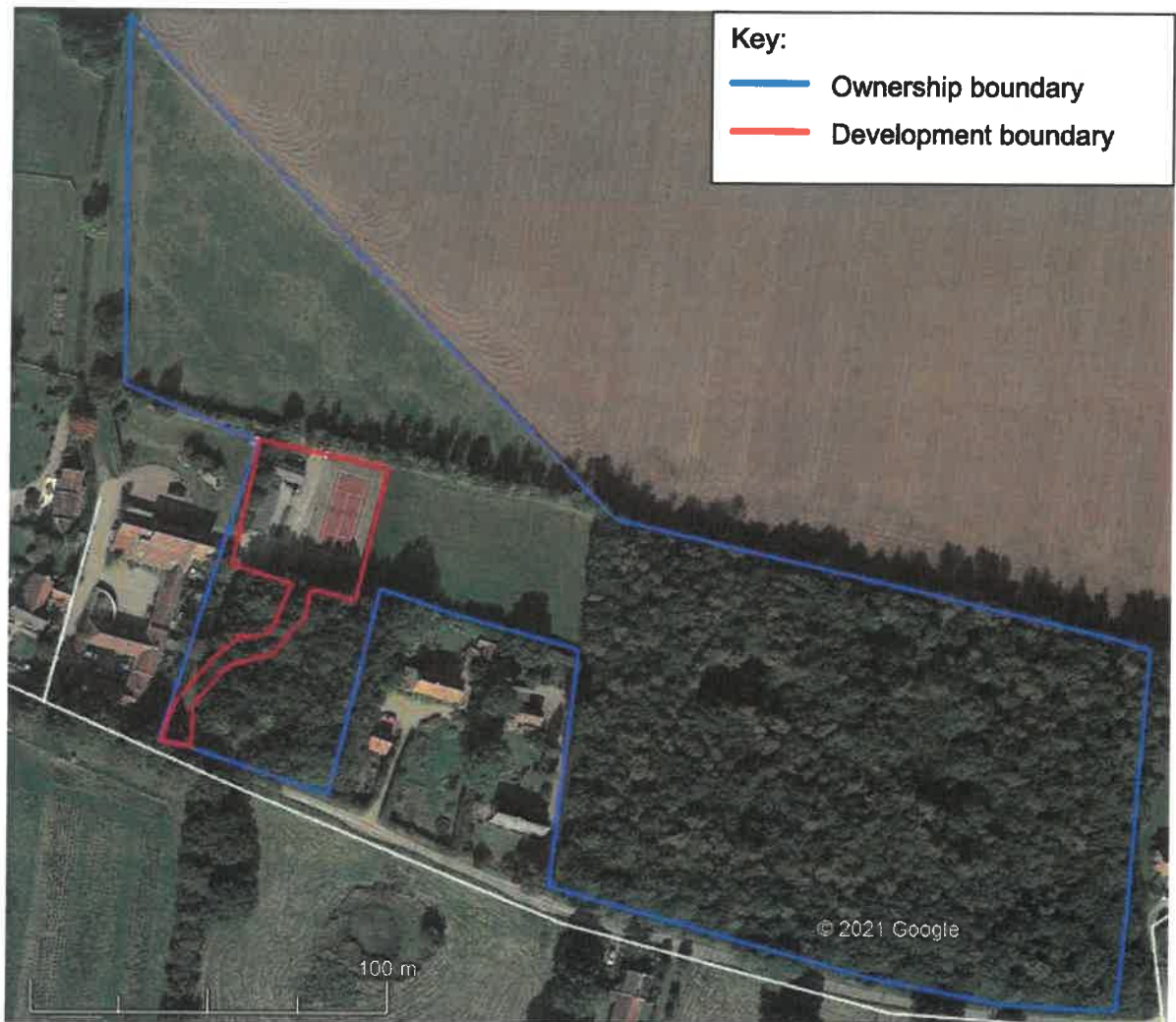
## Appendix 1 – Site Location



Source Google Earth Pro, 2021

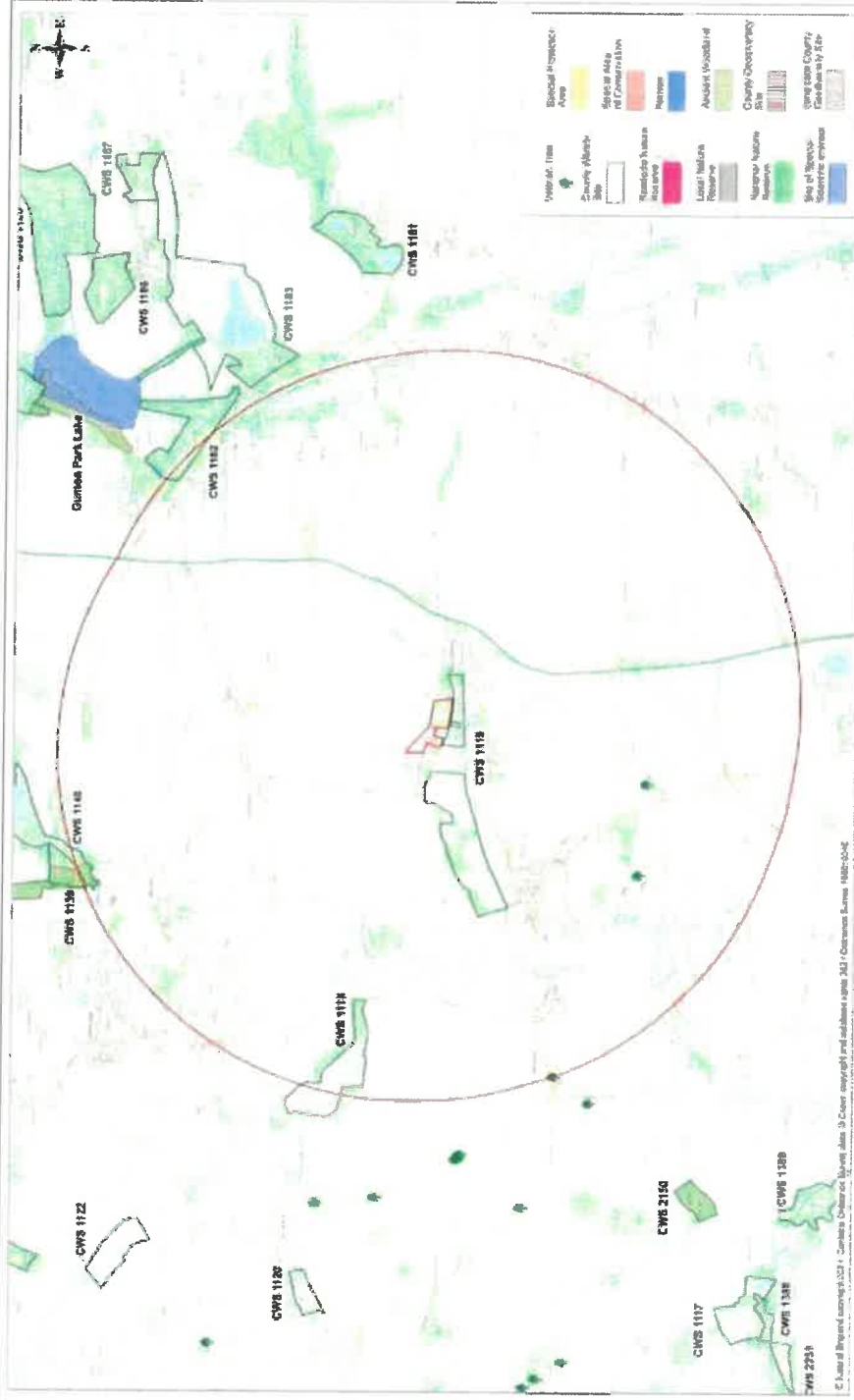


## Appendix 2 – Ownership and construction boundary



Source Google Earth Pro, 2021

# Appendix 3 – NBIS Map



**2km Data Search Around Site at Thwaite Common, Erpingham**  
 for Glaven Ecology  
 Scale: 1:20000  
 Compiled by L. Oddy on 18 April 2021

**NBIS**  
 Norfolk Biodiversity Information Service  
 County Hill  
 Melton Road  
 Norwich NR1 2SG  
 Tel: 01603 224458 Fax: 01603 223219

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## Appendix 4 – Survey photos



**Photograph 1: Existing access way.**



**Photograph 2: Tennis court.**



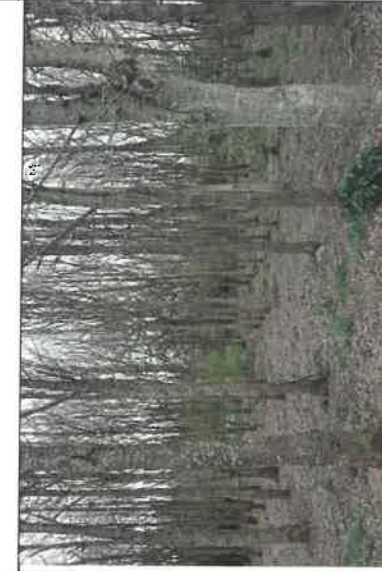
**Photograph 3: Hardstanding and wooden outbuildings**



**Photograph 4: Species poor amenity grassland to east of tennis court.**



**Photograph 5: Species poor grassland to north of tennis court.**



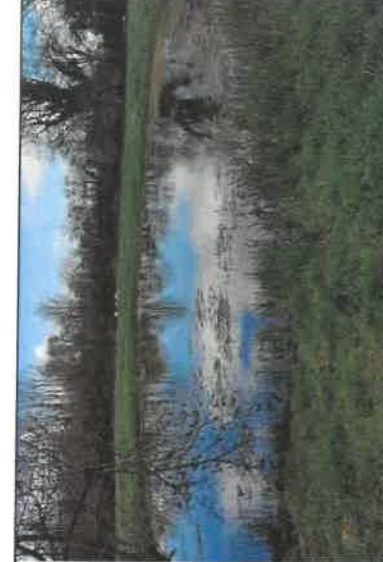
**Photograph 6: Plantation woodland to south of tennis court.**



**Photograph 7: Plantation woodland in the east of the site.**



**Photograph 8: New hedgerow planting.**



**Photograph 9: Pond 1 - Thwaite Common**



**Photograph 10: Pond 2 - Thwaite Common.**



**Photograph 11: Pond 3 - Homestead Farm (visible from roadside).**



**Photograph 12: Pond 6 - The Street.**



**Photograph 13: Pond 7 – The Street.**

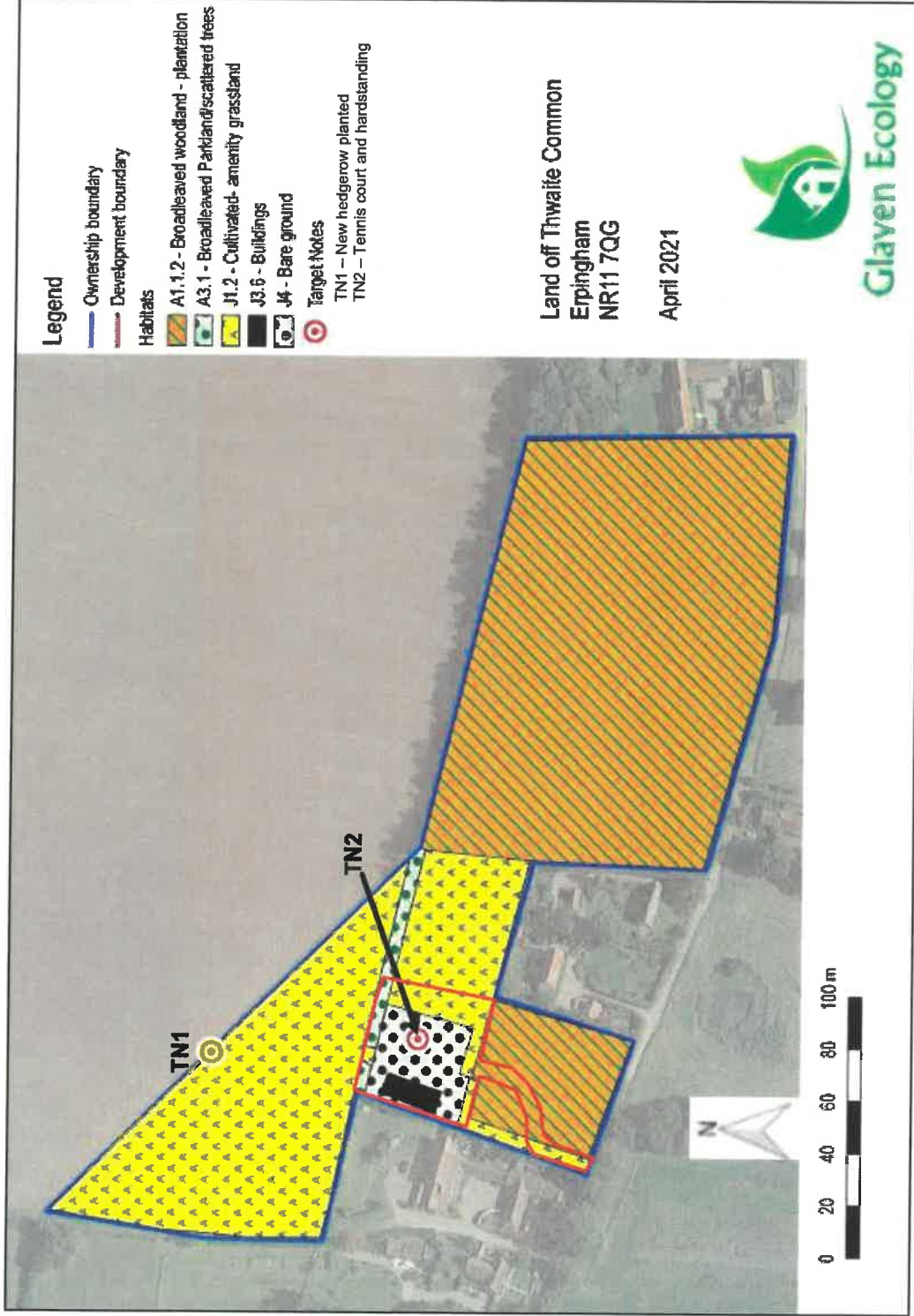


**Photograph 14: Pond 11 – The Street.**



**Photograph 15: Pond 13 – Thwaite Common**

# Appendix 4 – Habitat map



## Appendix 5 – Ponds Map



Source: Google Earth Pro, 2021

## Appendix 7 – Biodiversity Net Gain Calculations

On-site baseline	Habitat units	19.17
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation, enhancement & succession)	Habitat units	27.72
	Hedgerow units	0.00
	River units	0.00
Net project biodiversity units (including all on-site & off-site habitat retention/creation)	Habitat units	8.54
	Hedgerow units	0.00
	River units	0.00
Total project biodiversity % change (including all On-site & Off-site Habitat Creation + Retained Habitats)	Habitat units	44.56%
	Hedgerow units	0.00%
	River units	0.00%

On-site Habitat group	Baseline		Post development on site		Onsite Change		Overall Change	
	Existing area	Existing value	Proposed area	Proposed value	Area change	Onsite Unit change	Area change	Unit change
Cropland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grassland	0.0	0.0	1.1	9.0	1.1	9.0	1.1	9.0
Heathland and shrub	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rivers and lakes	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.2
Sparsely vegetated land	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Urban	1.2	0.0	-1.2	0.0	-2.4	0.0	-2.4	0.0
Wetland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Woodland and forest	2.0	0.0	0.0	18.5	-2.0	18.5	-2.0	18.5