
EXTENDED PHASE 1 HABITAT SURVEY

THORNBRIDGE HALL, ASHFORD- IN-THE-WATER, DERBYSHIRE

JULY 2021



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1.0 INTRODUCTION

Site Information

- 1.1 Rachel Hacking Ecology Limited was commissioned in 2021 by Emma Harrison CBE, via Emery Planning, to carry out an Extended Phase 1 Habitat Survey of land at Thornbridge Hall, Ashford-in-the-Water, Derbyshire (O.S. grid reference: SJ 91129 81880 – see Figure 1). Thornbridge Hall comprises a Grade II Listed property, with formal gardens, outbuildings and a wider estate, comprising waterbodies, grazed pasture, individual trees and woodlands.

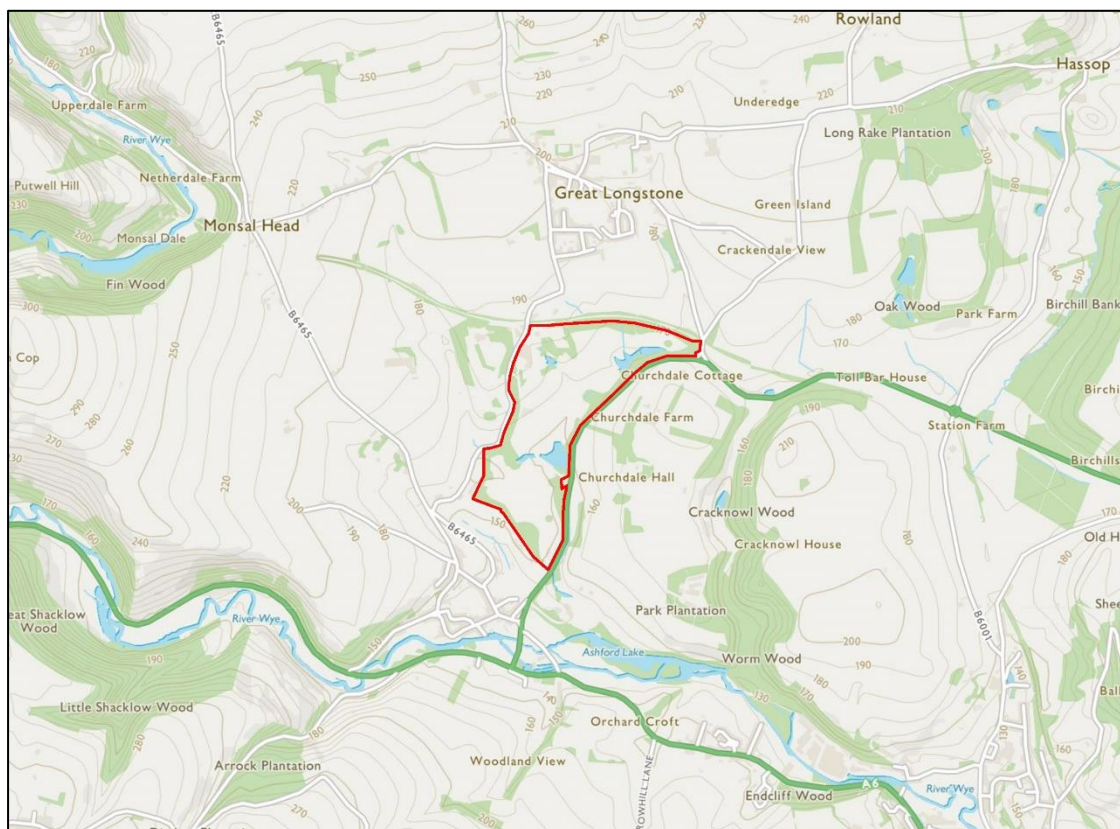


Figure 1 showing the location of Thornbridge Hall estate

Description of Development

- 1.2 The site is the subject of a Planning Appeal against an enforcement notice (referenced ENF:21/0034) issued by Peak District National Park Authority (PDNPA), for the construction of two driveways, a car park, a café building and associated hardstanding as well as fencing and works associated with the construction (appeal reference APP/M9496/C/21/3279072).
- 1.3 One of the reasons for the enforcement notice (reason 'g') states: *“Although we have no evidence of any specific ecological interests that may have been harmed by the unauthorised developments, the fact that the works have been carried out without any apparent ecological assessments or surveys means that the opportunity to assess the nature conservation importance of Thornbridge and its parkland, obtain information about the special interests of the site and mitigate any potential harm to those interests*



has been lost. The unauthorised developments are thus in conflict with the relevant planning policies, notably Core Strategy policy L2 and Development Management policy DMC11”.

- 1.4 This report presents the results of an Extended Phase 1 Habitat Survey and discusses the impact of the development on habitats and protected species.

Biodiversity in Planning

- 1.5 Biodiversity is a material consideration, and Local Planning Authorities (LPAs) have a requirement to consider biodiversity and protected species when determining planning applications. Section 15 of the National Planning Policy Framework (July 2021) gives specific reference to minimising the impacts of development on biodiversity. Local and Neighbourhood plans also provide guidance towards protecting and enhancing biodiversity, including priority habitats and notable species.

- 1.6 The PDPNA Core Strategy 2011 includes Policy L2 which deals with site of biodiversity importance. Policy L2 states:

- A. *Development must conserve and enhance any sites, features or species of biodiversity importance and where appropriate their setting.*
- B. *Other than in exceptional circumstances development will not be permitted where it is likely to have an adverse impact on any sites, features or species of biodiversity importance or their setting that have statutory designation or are of international or national importance for their biodiversity.*
- C. *Development must conserve and enhance any sites or features of geodiversity importance and where appropriate their setting.*
- D. *Other than in exceptional circumstances, development will not be permitted where it is likely to have an adverse impact on any sites or features of geodiversity importance or their setting that have statutory designation or are of international or national importance for their geodiversity.*

- 1.7 The PDNPA Development Management Policy DCM11 (2019) states:

A. Proposals should aim to achieve net gains to biodiversity or geodiversity as a result of development. In considering whether a proposal conserves and enhances sites, features or species of wildlife, geological or geomorphological importance all reasonable measures must be taken to avoid net loss by demonstrating that in the below order of priority the following matters have been taken into consideration:

- (i) enhancement proportionate to the development;*
- (ii) adverse effects have been avoided;*
- (iii) the ‘do nothing’ option and alternative sites that cause less harm;*
- (iv) appropriate mitigation; and*
- (v) in rare cases, as a last resort, compensation measures to offset loss.*



B. Details of appropriate safeguards and enhancement measures for a site, feature or species of nature conservation importance which could be affected by the development must be provided, in line with the Biodiversity Action Plan and any action plan for geodiversity sites, including provision for the beneficial future management of the interests. Development will not be permitted if applicants fail to provide adequate or accurate detailed information to show the impact of a development proposal on a site, feature or species including:

- (i) an assessment of the nature conservation importance of the site; and*
- (ii) adequate information about the special interests of the site; and*
- (iii) an assessment of the direct and indirect effects of the development; and*
- (iv) details of any mitigating and/or compensatory measures and details setting out the degree to which net gain in biodiversity has been sought; and*
- (v) details of provisions made for the beneficial future management of the nature conservation interests of the site. Where the likely success of these measures is uncertain, development will not be permitted.*

C. For all sites, features and species development proposals must also consider:

- (i) cumulative impacts of other developments or proposals; and*
- (ii) the setting of the development in relation to other features of importance, taking into account historical, cultural and landscape context.*



2.0 METHODOLOGY

Extended Phase 1 Habitat Survey

- 2.1 A Phase 1 Habitat survey was undertaken to JNCC standards (JNCC, 2010). The site (meaning the land at the construction zones and immediately adjacent) was walked, and each habitat was assigned a Phase 1 habitat category. Species lists were taken at locations of botanical interest. All botanical nomenclature follows Stace, 2019. A Phase 1 map was produced showing habitat boundaries.
- 2.2 During the Extended Phase 1 survey, the habitats were assessed for their potential to support protected species. This included, for example, looking for signs of Badger activity (e.g., setts, paths, latrines, and hairs on fences), assessing any waterbodies on site or near the site for their potential to support Great Crested Newt, assessing any mature trees for bat roosting suitability and assessing habitats for nesting birds, including ground-nesting birds.
- 2.3 The site was also surveyed for invasive, non-native plant species such as Japanese Knotweed and Giant Hogweed.
- 2.4 An assessment was made as to the type of habitats likely to have been affected by the construction of the driveways, car park, building and hardstanding and the erection of the fencing.

Personnel and Seasonal Timing

- 2.5 Dr. Rachel Hacking (Principal Ecologist) and Joel Hacking (Senior Ecologist) carried out the Phase 1 Habitat Survey on the 14th July 2021. Rachel has over twenty years of experience in botanical, habitat and protected species assessments. Joel has over eight years of experience and is fully trained. July is an optimal time of the year for botanical work and a thorough assessment could be undertaken. Protected species assessments can be undertaken at any time of year. The weather at the time of the survey was mild, sunny and calm.

Survey Constraints

- 2.6 The site was fully accessible. There were no constraints to the survey.



3.0 RESULTS

HABITATS

- 3.1 The Phase 1 Habitat Map can be found at the back of the report. The habitats on the site are described below.

Poor Semi-improved Grassland (Driveway and Car Park)

- 3.2 The estate mainly comprises poor semi-improved grassland, which is managed by sheep and cattle grazing and cutting. Looking at the land during the survey and aerial photography, it is clear that the new driveway (Driveway A on the enforcement notice) and the new car park have been constructed on this habitat (see Photographs 1 and 2). The grassland is cropped short and the assemblage includes Perennial Rye-grass *Lolium perenne*, Yorkshire Fog *Holcus lanatus*, Red Fescue *Festuca rubra*, Rough Meadow-grass *Poa trivialis*, Cock's-foot *Dactylis glomerata*, Common Bent *Agrostis capillaris*, Sweet Vernal-grass *Anthoxanthum odoratum*, Field Horsetail *Equisetum arvense* and Common Nettle *Urtica dioica*.



Photograph 1 showing the poor semi-improved grassland either side of the new driveway looking south from the car park





Photograph 2 showing the poor semi-improved with the new driveway in the distance

Ephemeral/Short Perennial

- 3.3 Low-growing ephemeral vegetation is establishing across bare soil and earth bunds, left over from the construction of the road and car park (see Photographs 3 and 4). The species within the habitat include grasses that occur within the poor semi-improved grassland (presumably from the seed bank of the grassland that was lost to the development) as well as Redshank *Persicaria maculosa*, Common Chickweed *Stellaria media*, Creeping Buttercup *Ranunculus repens*, Greater Plantain *Plantago major*, Broad-leaved Dock *Rumex obtusifolius* and Knotgrass *Polygonum aviculare*.



Photograph 3 showing the ephemeral/short perennial habitat at the car park including on the bund



Photograph 4 showing the ephemeral/short perennial habitat on the bund that lies along the new driveway

Amenity Grassland

- 3.4 Amenity grassland occurs adjacent to the new café building (see Photograph 5). Looking at aerial photography, both recent and historic, the café and associated hardstanding was constructed on a square lawn, which was mown. The remaining amenity grassland is species-poor and is regularly mown. Species include Red Fescue *Festuca rubra*, Daisy *Bellis perennis*, Annual Meadow-grass *Poa annua* and Dandelion *Taraxacum officinale* agg.

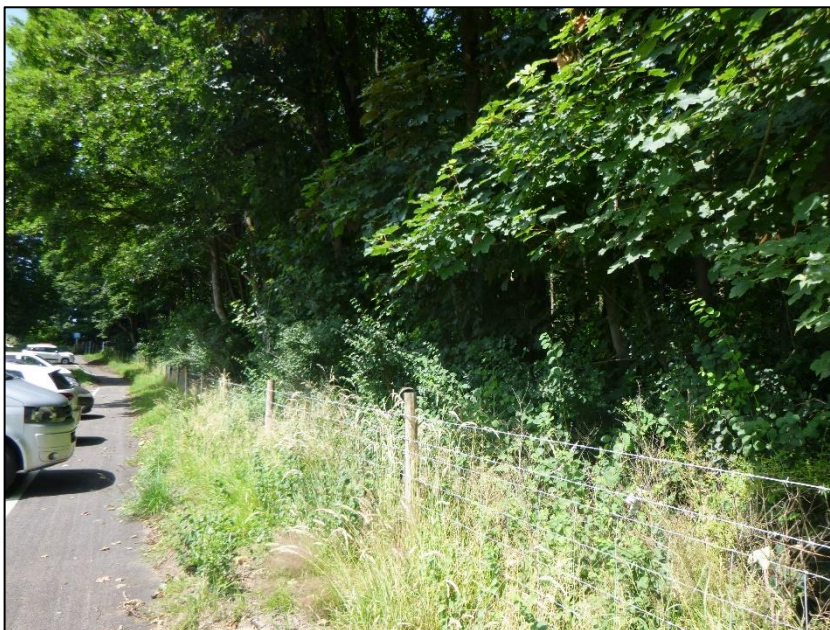


Photograph 5 showing the amenity grassland



Neutral Grassland

- 3.5 A small strip of neutral grassland exists at the northern edge of the new car park (see Photograph 6). No trees have been felled here. The neutral grassland looks well established and comprises mainly False Oat-grass *Arrhenatherum elatius*, Cock's-foot *Dactylis glomerata* and Yorkshire Fog *Holcus lanatus*.



Photograph 6 showing the neutral grassland

Bare Ground

- 3.6 The new driveways, car park and areas adjacent to the café are mapped as bare ground. These comprise tarmac and chipped stone areas (see Photograph 7).



Photograph 7 showing the bare ground at the car park



Mixed Plantation Woodland

- 3.7 One of the new driveways (Driveway B within the enforcement notice) passes through a belt of mixed plantation woodland (see Photograph 8). It appears from aerial photography that a woodland track was in existence here and it has recently been widened and is now tarmac. The woodland is species-poor and comprises conifers, Sycamore *Acer pseudoplatanus*, Horse Chestnut *Aesculus hippocastanum*, Lime *Tilia x europaea* and Rhododendron *Rhododendron ponticum*. The ground flora is species-poor and comprises Spanish Bluebell *Hyacinthoides hispanica*, Common Nettle *Urtica dioica* and Creeping Bent *Agrostis stolonifera*. No evidence of recent tree felling was apparent during the survey.



Photograph 8 showing the driveway and the mixed plantation woodland

Building

- 3.8 The new café is the only building on site. This is a steel-framed structure with wooden cladding. It is in use.

Species-poor Intact Hedgerow

- 3.9 A mature species-poor intact hedgerow occurs just north of the new café. It comprises Beech *Fagus sylvatica* (see Photograph 9). This does not appear to have been deleteriously affected by the construction.



Photograph 9 showing the Beech hedgerow

Trees

- 3.10 Numerous mature trees exist within the parkland setting of the estate. Some of these occur close to the new driveways and within the car park (see Photographs 10 and 11). Species include Sycamore *Acer pseudoplatanus*, Horse Chestnut *Aesculus hippocastanum*, Norway Maple *Acer platanoides* and Lime *Tilia x europaea*.



Photograph 10 showing trees along the new driveway



Photograph 11 showing trees along the new driveway

PROTECTED SPECIES

Great Crested Newt

- 3.11 Great Crested Newt (GCN) *Triturus cristatus* is a European Protected Species under the Conservation of Habitats and Species Regulations 2019 (Amendment) (EU Exit) and the species is fully protected under the Wildlife and Countryside Act 1981 (as amended).
- 3.12 No waterbodies have been lost to the construction of the driveways, car park or building and it appears that no waterbodies have been impacted upon. Three waterbodies exist within the parkland of Thornbridge Estate and three pools exist within the formal gardens (see Figure 2).

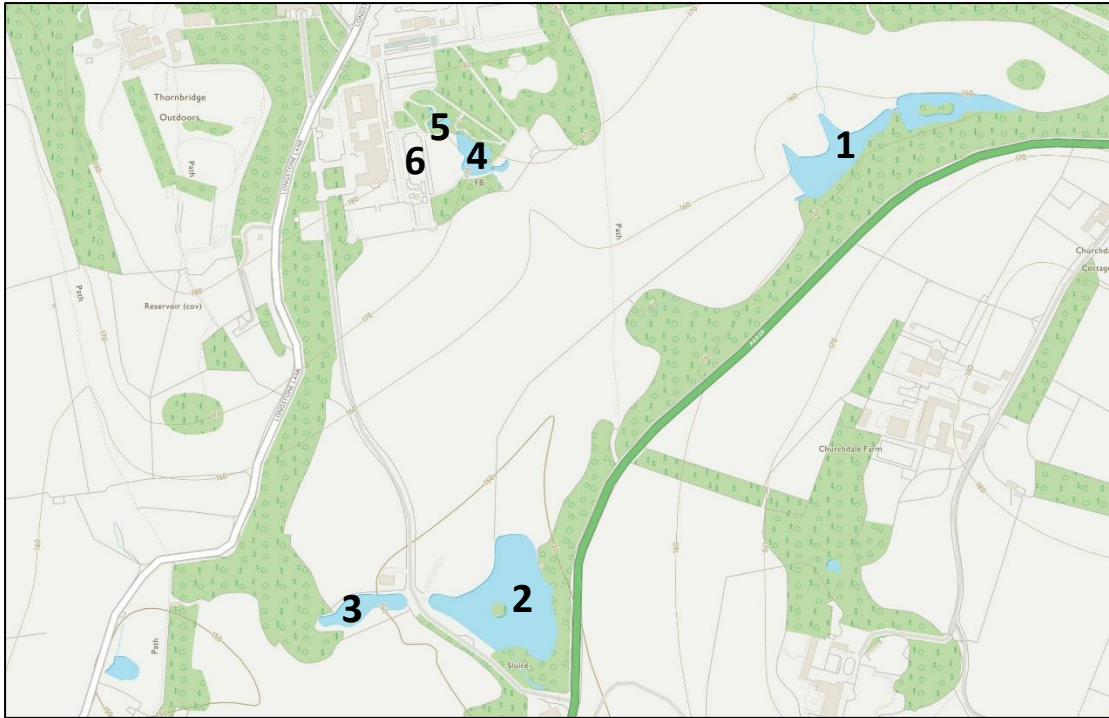


Figure 2 showing the parkland waterbodies (1-3) and the waterbodies within the gardens (4-6)

- 3.13 The three estate waterbodies comprise two lakes and a smaller pool (see Photographs 12 and 13). Waterbodies 2 and 3 comprise large expanses of open water, used by waterfowl such as Canada Goose *Branta canadensis*. Marginal vegetation includes Meadowsweet *Filipendula ulmaria*, Lesser Spearwort *Ranunculus flammula*, Yellow Flag *Iris pseudacorus* and Floating Sweet-grass *Glyceria fluitans*. Waterbody 3 supports dense stands of Reed Sweet-grass *Glyceria maxima* and Bulrush *Typha latifolia*.



Photograph 12 showing Waterbody 2



Photograph 13 showing Waterbody 3

- 3.14 The pools within the formal gardens are well-maintained for amenity purposes. Waterbody 4 is a named Koi Pool and supports Koi Carp (see Photograph 14). This is surrounded by ornamental shrubs. Waterbody 5 is a small pool within a rockery. Waterbody 6 is a square pool with a fountain within the Italian Garden. Waterbody 6 supports breeding Great Crested Newt, with numerous GCN efts present. GCN are known to occur within this pond (anecdotal evidence from the garden manager).



Photograph 14 showing Waterbody 4



Photograph 15 showing Waterbody 6

- 3.15 None of the waterbodies are directly connected to the construction zones via suitable amphibian habitat. All waterbodies lie across short grazed or mown grassland or hardstanding. The habitats that would have been affected by the construction of the main driveway (Driveway A), the car park and the café are not suitable terrestrial habitat for GCN. Driveway B was constructed on an existing track, with no habitat connectivity to the pools.

Bats

- 3.16 All bat species are European Protected Species. This is implemented in the UK through the Conservation of Habitats and Species Regulations 2019 (Amendment) (EU Exit). Bats are also protected under The Wildlife and Countryside Act 1981 (as amended).
- 3.17 No buildings exist on the site or were affected by the development. No mature trees have been felled by the construction. Most of the scattered parkland trees support a small number of Potential Roosting Features (PRFs), including cavities and limb damage. Where possible some of the PRFs were inspected and no evidence of bat usage was found (see Photograph 16). The trees closest to the constructions are considered to offer **low-moderate** bat roost suitability. No work is proposed to the trees at the time of writing.



Photograph 16 showing PRFs at a Norway Maple adjacent to the new driveway

Badger

- 3.18 Badgers *Meles meles* are protected under the Protection of Badgers Act 1992 and The Wildlife and Countryside Act 1981 (as amended). These Acts, for example, make it illegal to disturb a Badger whilst it is in a sett, to kill, injure or take a Badger and to obstruct the entrance to a Badger sett.
- 3.19 No Badger sett was located on the site or within 30 metres of any of the construction zones. No other evidence of Badger activity such as latrines or snuffle holes was located on site.

Nesting Birds

- 3.20 All bird species are protected at their nest under the Wildlife and Countryside Act 1981 (as amended).
- 3.21 The trees, hedgerow and woodland provide suitable nesting habitat for birds. The grassland on site is not considered to be suitable for ground-nesting birds, given the level of grazing and cutting disturbance to the site, as well as the numerous Corvid perches. No Barn Owl *Tyto alba* evidence was found within the trees close to the construction zones.

INVASIVE SPECIES

- 3.22 No invasive, non-native species, as listed on Schedule 9 Part II (plants) of The Wildlife and Countryside Act 1981 (as amended), were found on site.

PROTECTED SITES

- 3.23 No statutory or non-statutory protected sites lie on the site or immediately adjacent to the site boundary. The nearest statutory protected site is the Wye Valley Site of Special Scientific Interest (SSSI), which lies 740m to the north-west of the café.
- 3.24 The site lies within a SSSI Impact Risk Zone, which lists certain types of development that may deleteriously impact upon local SSSIs. The type of development proposed is not listed as a concern at this location.
- 3.25 The nearest non-statutory protected site is Shady Lane Meadows Local Wildlife Site (LWS) which lies 410 metres to the south-west at its nearest point.

INCIDENTAL RECORDS

- 3.26 Thornbridge Hall provided a species list of mammals, birds, invertebrates, fungi, herptiles and higher plants that have been recorded recently from the estate, as part of an on-going commitment to record the biodiversity value of the estate. Great Crested Newt and Badger were included within the lists and these are the only two protected species mentioned. Badger is known to occur around the wider estate and a single Great Crested Newt was seen in the 'top lake' in summer 2021. Multiple species of Odonata (dragonflies and damselflies) have been recorded at the parkland waterbodies.

4.0 ASSESSMENT

HABITATS

- 4.1 The Phase 1 Habitats present on the site are common throughout the UK. No nationally rare or locally rare plant species were located during the Extended Phase 1 Habitat Survey.
- 4.2 The majority of the site offers limited ecological value. The poor semi-improved grassland is species-poor with a homogenous, intensively managed sward. The bare ground offers negligible wildlife value. The ephemeral vegetation offers some value, with the variety of species providing a pollen and nectar source for invertebrates. The bund by the side of the main driveway also offers a south-facing slope of bare earth, which is valuable habitat for insects such as solitary bees. The mixed plantation woodland is the most ecologically valuable habitat on site. It provides cover and foraging for birds, small mammals and amphibians and nesting habitat for birds.
- 4.3 The habitats on the site are classified as Wood Pasture and Parkland UK Priority Habitat and Lowland Deciduous Woodland UK Priority Habitat (www.magic.gov.uk). The Wood Pasture and Parkland habitat has been affected by the construction of the main driveway and the car park. No other UK Priority habitat has been affected by the other construction zones. Mitigation for the loss of the Wood Pasture and Parkland habitat is discussed below.

Development Context

- 4.4 The construction of the main driveway and car park has meant the loss of species-poor grassland. The construction of the café and associated hardstanding has meant the loss of amenity grassland. Both these habitats are of limited ecological value. The second driveway through the woodland has been constructed over an existing track and no mature trees have been affected.
- 4.5 Detailed landscaping plans have been developed by Barnes Walker, to mitigate for the new driveways and car park. The landscaping scheme includes the following elements, which will bring biodiversity gain to the site, through an increase in species and habitat diversity:

Car Park

- 4.6 The existing bunds at the car park will be regraded, to ensure they blend into the parkland setting. Following the regrading, the bunds will be planted with a variety of native trees and shrubs, including Silver Birch, Downy Birch, Hazel, Hawthorn, Crab Apple, Holly, Bird Cherry, Rowan and Pedunculate Oak. In addition, individual trees will be planted within the car park such as Sessile Oak, Scot's Pine and Norway Maple. The lower slopes of the bunds will be seeded with a parkland grass mixture, to compensate for the loss of parkland habitat (see drawing no's: M3406-PA-01-V2 Car Park Bund Remediation & M3406-PA-02-V2 Car Park Landscape Layout).

Driveway A

- 4.7 The existing bund along the edge of the new main driveway will be regraded slightly, with a shallow north-facing slope and a steeper south-facing slope, to retained valuable invertebrate habitat. The north-facing slope will be seeded with Emorsgate EG26 Standard Old Fashioned Grazing Mixture (to compensate for the wood pasture grassland loss) and the south-facing slope will be seeded with Emorsgate EM6 Meadow Mixture for Chalk and Limestone Soils, to provide a species-rich source of pollen and nectar, in keeping with the local landscape (see drawing no: M3406-PA-05-V2 Parkland Driveway Bund Remediation).

Tree Planting

- 4.8 Across the parkland estate, a number of trees are diseased, dying or dead and a successional tree planting scheme has been designed (see drawing no: M3406-PA-06-V2 Succession Parkland Tree Planting). This includes the retention of the dead, dying and diseased trees for their wildlife value, unless the tree in question poses a health and safety risk. Where a tree needs to be felled, the deadwood will be used to create log/brush piles throughout the estate to benefit invertebrates, mammals and amphibians.

PROTECTED SPECIES

Great Crested Newt

- 4.9 No ponds exist or did exist on the construction site. Three waterbodies exist within the parkland of Thornbridge Estate and three pools exist within the formal gardens. None of the waterbodies have been affected by the construction of the driveways, car park or café area. Great Crested Newt (GCN) is known to occur within the formal pool at the Italian Garden, which lies 140 metres from the nearest construction zone. A single GCN has also been spotted in the 'northern lake', although this has not been verified. The new main driveway (Driveway A) was constructed on short-grazed/cut grassland which is a hostile environment for amphibians. The café and associated hardstanding was constructed on amenity grassland which is also unsuitable habitat for amphibians. The northern driveway (Driveway B) has been constructed on an existing woodland track. There is, or was, no habitat connectivity between the waterbodies and the construction zones.
- 4.10 The earth bunds which have been created and left in-situ offer suitable terrestrial GCN habitat and these are to be regraded. However, there is no habitat connectivity between the bunds and the waterbodies. Given the above, there is no evidence that GCN breeding habitat or terrestrial habitat has been impacted upon by the construction. The regrading of the bunds does not require GCN licensing and it is considered reasonably unlikely that GCN occurs within the bunds. However, retaining the bunds following regrading and seeding them with wildflower grassland will provide suitable GCN foraging and hibernation habitat.

Bats

- 4.11 No buildings were affected by the construction. The mature trees were not affected by the construction of the driveways and car park. A number of these parkland trees support a small number of Potential Roosting Features (PRFs) and are considered to offer **low-moderate** bat roosting suitability. These trees are to be retained. However, if work is proposed to these trees, an aerial climb will be necessary, using licensed and trained surveyors, to search each PRF for evidence of bat activity prior to work commencing.
- 4.12 The construction zones did not support suitable bat foraging habitat and the woodland edge close to the car park has been retained. No artificial lighting is proposed and therefore there has not been, or will not be, any impact on bat foraging and commuting habitat. Numerous bat boxes will be erected onto the mature trees across the estate.

Badger

- 4.13 No Badger sett was located on the site or within 30 metres of the construction zones. No evidence of Badger activity was located. No Badger sett was affected by the construction and the regrading of the bunds will not impact upon Badger.

Nesting Birds

- 4.14 The woodland, trees and hedgerow provide suitable bird nesting habitat. No nesting habitat was affected by the construction. No Barn Owl evidence was found within any of the mature parkland trees. If any work to suitable bird nesting habitat is required in the future, nesting birds can be mitigated for by allowing no works to potential nesting habitats to be carried out within the bird nesting season (which is generally March – August) unless a nesting bird survey is undertaken first. Numerous bird boxes will be erected onto the retained trees across the estate.

PROTECTED SITES

- 3.27 No statutory or non-statutory protected sites lie within, or adjacent to, the construction zones. The nearest statutory protected site is the Wye Valley SSSI, which lies 740m to the north-west of the café. The nearest non-statutory protected site is Shady Lane Meadows LWS, which lies 410 metres to the south-west at its nearest point. At these distances, with suitable barrier habitats such as roads and farmland in-between it is considered that there has been no deleterious impact on any protected sites from the development and the mitigation proposals will not impact upon any protected sites.

SUMMARY

- 3.28 No protected species have been affected by the construction of the driveways, car park and café area. The habitats that have been impacted are species-poor and of limited ecological value. A small part of a UK Priority Habitat has been lost (Wood Pasture and Parkland) but this is in abundance elsewhere on the estate and only grassland has been effected, no other constituent habitats of Wood Pasture and Parkland. Detailed landscaping proposals include species-rich planting and regrading of the bunds, to bring a greater number of species and habitats to the site than what currently exists. The

structural diversity of the site will also increase, benefitting invertebrates. Bird and bat boxes will be erected to increase nesting and roosting provision. Therefore, the development delivers biodiversity gain. Thornbridge Hall is committed to increasing the biodiversity value of the estate, though recording and enhancing habitats throughout the parkland and formal areas.

5.0 RECOMMENDATIONS

Further Surveys

- 5.1 Protected species are a material planning consideration. Following the findings from the Extended Phase 1 Habitat Survey, no further protected species surveys or licensing are required.
- 5.2 If any trees required treating or felling in the future the following surveys may be required:
 - **Nesting Birds** - If any work to suitable vegetation needs to be carried out within the bird nesting season (which is generally March to August), then a nesting bird survey will be required immediately prior to work commencing.
 - **Bat Survey** – An aerial climb, using licensed, trained and certified bat surveyors should be undertaken at the mature parkland trees prior to felling or treating.

Protected Species

- 5.3 If a protected species, such as a Great Crested Newt, is found during the regrading of the bunds, work must temporarily cease and a suitably experienced ecologist be contacted for advice.

Habitat Protection

- 5.4 It is recommended that the car park and driveways are not lit by artificial lighting, to retain the suitable bat foraging and commuting habitat at the edges.

Habitat Enhancement

- 5.5 As well as the implementation of the Barnes Walker landscaping proposals, the following protected species habitat should be included:
 - 20 x bird boxes should be erected onto mature trees to be retained. The bird boxes should be constructed of long-lasting material such as woodcrete (e.g. Schwegler) and have a number of different entrance sizes, to support a number of different bird species. The bird boxes must be erected at least 3 metres in height and facing north or east.
 - 20 x bat boxes should be erected onto mature trees to be retained. The bat boxes should be constructed of woodcrete or similar (e.g. Schwegler) and be of various sizes and types. The bat boxes must be erected at least 3 metres in height and facing south or west.

6.0 REFERENCES

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APPENDIX A PHASE 1 HABITAT MAP

