

Miry Meadow, Chapen-en-le-Frith Protected Species Survey

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1 Introduction

1.1 Background

- 1.1.1 Dunelm Ecology Ltd was commissioned to undertake protected species survey at Miry Meadow, Chapel-en-le-Frith. The survey was carried out in support of a planning application to redevelop the site as a residential scheme. This would involve the loss of most existing habitats within the site although the majority trees and a pond would be retained.

1.2 Aims and Objectives

- 1.2.1 The main objective of the assessment was to identify the presence of any priority/protected species within the application site. Habitats and Biodiversity Net Gain are covered in a separate report. This report provides an overview of the legislation and policies relevant to protected species within the UK. Also included are a description of the methods used and the results of the ecological appraisal. The implications of the survey findings are discussed, with an assessment of potential impacts provided and recommendations to prevent, reduce and/or offset any adverse ecological impacts.

1.3 Legislative and Policy Context

- 1.3.1 A range of legislation has been established in the UK to protect important nature conservation sites and species. This includes the Wildlife and Countryside Act (WCA) (1981) (as amended), Countryside and Rights of Way (CROW) Act 2000 and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Section 14 of the WCA 1981 also makes it an offence to spread or release into the wild certain plants and animals which may cause ecological, environmental, or socio-economic harm. These are listed under Schedule 9 of the Act.
- 1.3.2 The Hedgerows Regulations (1997) regulate hedgerow removal and affords increased protection to those meeting certain ecological, landscape, cultural or archaeological criteria.
- 1.3.3 The Protection of Badgers Act (1992) protects badgers and their setts from persecution. The purpose of this Act was, therefore, animal welfare as opposed to concern over the conservation status of this mammal, which is common and widespread across much of rural Britain. However, the Act also contains restrictions that apply more widely, and have relevance to developers.
- 1.3.4 The UK Post-2010 Biodiversity Framework published in 2012 and updated in 2018, is the government's response to the Convention on Biological Diversity (1992). It describes the UK's biological resources, commits a detailed plan for the protection of these resources within the UK's devolved framework across England, Wales, Scotland and Northern Ireland. The document identifies future priorities for nature conservation and adopts a more strategic approach, including ecosystem services and sustainability alongside biodiversity. Despite administrative changes following devolution, there is still an underlying objective of protecting and enhancing a range of priority species and habitats, often still based on the objectives and classifications of the original UK Biodiversity Action

Plan. Biodiversity 2020 is England's national biodiversity strategy. Building on the Natural Environment White Paper published in 2011, this provides a means of delivering the international and EU commitments to biodiversity. Under Biodiversity 2020, Priority Species and Habitats referred to are those of 'Principal Importance' for the conservation of biodiversity in England listed on Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006.

- 1.3.5 The effects of developments on protected species are considered in the National Planning Policy Framework (NPPF). Section 15 of the NPPF states that Planning policies and decisions should contribute to and enhance the natural and local environment through a range of measures including minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs. Local authorities in England are required to ensure that where significant harm resulting from development cannot be avoided (through locating on alternative sites with less harmful impacts), adequately mitigated, or, as a last resort, compensated for; planning permission is refused.

2 Methods and Approach

2.1 Desk Study

- 2.1.1 Information was sought on existing ecological records within the application site boundary, and within a 1 km radius. In particular, the study aimed to identify the location of designated statutory and non-statutory nature conservation sites, and any existing records for protected or priority species. This principally involved consultation with Derbyshire Wildlife Trust (DWT) which acts as a repository for ecological information from many sources in Derbyshire.

2.2 Field Survey

Protected and Priority Species

- 2.2.1 A general assessment for the presence or potential presence of protected and priority species was undertaken on 30 April 2025, noting any areas of suitable habitat and the location and type of any field signs recorded. Owing to the nature of the development proposals and composition of habitats within the site, this element of the survey primarily focused on bats, barn owls, badgers and great crested newts (GCN) further information on specific survey methodologies for these receptors is provided below.

Bats

- 2.2.2 A preliminary roost assessment (PRA) of buildings within the site was carried out following the methodology outlined in the Bat Conservation Trust's *Bat Surveys Good Practice Guidelines* (Collins 2023). This involved systematically searching the exterior and interior of buildings for bats and their field signs with the aid of close-focusing binoculars (Opticron Countryman BGA 8x42) and a powerful torch (Clulite 1M candle-power). Such signs may include insect remains, droppings, grease marks, urine stains and smoothing or lack of cobwebs. Buildings were assigned to a roost potential category, based on their suitability for supporting roosting bats (see Table 1).
- 2.2.3 An initial ground level tree assessment (GLTA) of trees scheduled for felling was also undertaken. This involved a detailed inspection of the exterior of trees from the ground to look for features that bats could use for roosting (PRFs) (Collins 2023). Trees were ascribed to a roost potential category as shown in Table 2. Subsequent aerial inspection surveys of PRFs was subsequently carried out between 23 July 2025, using ropes and harnesses to undertake a more detailed inspection of PRF. This helped refine the results of the initial GLTA.

Table 1 Building Roost Assessment Criteria

Roost Potential Category	Description of Roosting Habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).

Roost Potential Category	Description of Roosting Habitats
Negligible	No obvious habitat features on site likely to be used by roosting bats, however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. 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 and not a classic cool/stable hibernation site but could be used by individual hibernating bats).
Moderate	A structure 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 such as maternity or hibernation – the categorisation in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure 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. These structures have the potential to support high conservation roosts e.g. maternity or classic cool/stable hibernation site.

Table 2 Tree Roost Assessment Criteria

Roost Potential Category	Description of Roosting Habitats
None	Either no PRF in the tree or highly unlikely to be any
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitat
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony

Birds

- 2.2.4 Birds were surveyed for in conjunction with the bat survey. This involved searching the interior and exterior of buildings and trees for signs of occupation including droppings or splashing, pellets (regurgitated prey remains), feathers and nests.

GCN

- 2.2.5 There is one pond in the site and no others within 250 m. This pond was subject to eDNA testing on 22 April 2025 following the protocol recommended by Natural England. In summary, the survey involved taking 20 water samples from around

the pond's margins using a sample kit provided by SureScreen Scientifics. Sampling targeted areas where there was vegetation suitable for use as egg laying material but avoided areas less than 50 – 100 mm deep. Before each sample was taken, the water column was mixed gently to maximise the chances of detecting GCN eDNA. Once all the samples had been collected, they were vigorously shaken for ten seconds in a whirl bag to ensure any eDNA was mixed across the whole water sample. A pipette was then used to add water samples to sterile tubes containing ethanol to preserve any eDNA present. Each tube was then mixed for a further ten seconds to prevent eDNA degradation. Preserved samples were returned to SureScreen Scientifics for analysis.

Badger

- 2.2.6 The survey was undertaken following the standardised methodology given by Harris *et al.* 1989. This included a search for badger setts, badger paths (including footprints), latrine sites (or dung pits), trapped hair on fences and evidence of foraging. The survey encompassed habitats up to 30 m from the site boundary where access was possible.

2.3 Personnel

- 2.3.1 Most of the surveys were led by Jon Guarnaccio MCIEEM. Jon has 22 years experience as an ecological consultant and holds survey licenses for numerous protected species including bats, GCN and barn owl. Aerial tree inspections were carried out by Helen Hamilton MCIEEM who has over 30 years experience as an ecological consultant and is also a licensed bat ecologist.

2.4 Survey Constraints

- 2.4.1 All surveys were undertaken at an appropriate time of year following best practice guidelines with access to all parts of the site. It should be noted that the behaviour of animals can be unpredictable and may not conform to standard patterns recorded in scientific literature. Therefore, this report cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats, or that they will not occur in locations or habitats that appear unsuitable.
- 2.4.2 Owing to the high mobility of some species such as bats and birds, survey data are only valid for a limited amount of time and therefore have a shelf life of 12 – 18 months (CIEEM 2019).

3 Results

3.1 Desk Study

- 3.1.1 There is one Local Wildlife Site (LWS) within the search area. Brookside Pastures LWS is an unimproved neutral grassland located 620 m southeast on the opposite side of Chapel-en-le-Frith. The site falls within the SSSI risk zone for Combs Reservoir but based on the planning proposals, Natural England would not need to be consulted.
- 3.1.2 DWT provided numerous records of protected and priority species within the search area including bats (pipistrelle spp., noctule, Myotis spp. and brown long-eared bats), brown hare, hedgehog, and numerous species of bird including barn owl, swallow, swift and lapwing. However, none of the records originate from within the site and most are from the wider area. The closest records are from the nearby St Thomas Becket church (common garden birds and bluebells).

3.2 Field Survey

Protected and Priority Species

Bats

- 3.2.1 The results of the PRA, GLTA and aerial inspection surveys are shown in Table 3 below (trees with no roost potential have not been included to avoid unnecessary repetition). In summary, no evidence of bats was recorded within any of the buildings or trees surveyed. The on-site buildings offer negligible roost potential for bats on account of their construction one tree scheduled for removal was ascribed to the PRF-I roost potential category.

Table 3 Bat Inspection Survey Results

Building/Tree Ref (see Arb report)	Description	Roosting Opportunities & Signs of Bat Use	Roost Potential
B1	Small timber-built stables housing horses and goats. The roof is pitched and clad with corrugated metal.	No evidence of bats was recorded and no crevice roosting opportunities exist.	Negligible
B2	Small timber shed with pitched roof	No evidence of bats was recorded and no crevice roosting opportunities exist.	Negligible
G4	Mature ash, 20 m tall.	Snapped limbs at 8 m but open and very exposed. Tree also supports dense ivy.	PRF-I

Birds

- 3.2.2 The buildings offer nesting habitat for swallows while trees and scrub provide nesting habitat for a variety of species. No evidence of barn owls was recorded in any of the trees surveyed.

Badgers

- 3.2.3 No evidence of badgers was recorded although closely grazed grassland provides suitable foraging habitat. An absence of existing records would however suggest that badgers are not common in the locality.

GCN

- 3.2.4 The pond within the site tested negative for GCN eDNA.

Non-native Invasive Species

- 3.2.5 The pond supports swamp stonecrop which is a Schedule 9 listed species. A non-native *Rubus* sp. (tentatively identified as *R. glauca*) was present on the southern edge of the site near the pond, but this has recently been cleared, although roots are still present.

Summary

- 3.2.6 Taking the above information into consideration, GCN are excluded from further assessment within this report.

4 Discussion and Recommendations

Assessment

- 4.1.1 Table 4 below outlines potential impacts of the scheme on protected and non-native species.

Table 4 Assessment of Potential Impacts

Ecological feature	Potential Effect	Possible causes	Details of ecological effect
Bats	Post development interference	Installation of new lighting	There is currently no lighting scheme available but inappropriately positioned lighting of the wrong specification could have an adverse impact on light sensitive species such as brown long-eared and Myotis spp.
Birds	Mortality and Disturbance	Site clearance	Birds could be disturbed and/or possibly injured or killed if works take place during the nesting season (March – September). This action could, therefore, result in an offence under the legislation that protects all wild birds and their nests.
	Habitat loss	Site clearance	Permanent loss of nesting and roosting sites in buildings and woody vegetation. This would constitute an offence if nests were active at the time. Habitat loss is however unlikely to affect the viability of the local breeding bird population given that losses are relatively small and ample woody habitat will be retained both within and outside the site boundary.
Badger	Mortality and Disturbance	Construction phase	No evidence of badgers recorded but potential for animals to become trapped in any steep sided excavations left uncovered overnight.
Non-native invasive species	Habitat degradation	Ground preparation and earthworks may inadvertently spread Rubus sp. and swamp stonecrop across the site and to other areas	Construction activities have the potential to spread non native and Schedule 9 listed plant species. It is a legal offence to cause such species to spread/grow in the wild. The non-native Rubus sp. has largely been cleared although roots and some stems remain

4.2 Mitigation and Recommendations

- 4.2.1 Under CIEEM 2018 Guidelines, a sequential process should be adopted to avoid, mitigate and compensate negative ecological impacts and effects; this is often referred to as the 'mitigation hierarchy' and is the key principle following the impact assessment stage. Such measures are detailed in Table 5 while generic best practice guidance and procedures should also be implemented as part of the development. For instance, new fencing should include 130 mm gaps at the base to allow movement of hedgehogs through the site.

Table 5 Mitigation Measures

Ecological feature	Measures Proposed	Mechanism to secure delivery
Bats	Avoid death/injury of bats during tree felling Avoid the use of high-powered lighting and/or lighting in inappropriate locations.	Sectionally fell G4 to reduce risk of harming bats. Bespoke bat access features will be provided within the outer walls of each new dwelling. Two features will be provided per a dwelling.

Ecological feature	Measures Proposed	Mechanism to secure delivery
		The use of low-level LED lighting bollards are recommended as these result in limited light spill and are unlikely to deter bats from using roost sites. In general, light levels in vicinity of roost access points should not exceed 1 lux. Lighting levels on woodland edge and aquatic habitats should not exceed 3 lux.
Birds	Avoid death/injury of nesting birds which would constitute a legal offence under Wildlife and Countryside Act (1981) as amended. Compensate for loss of nesting habitat through creation of new nesting sites.	Building works and woody vegetation clearance should take place outside the breeding bird season which lasts from March to September inclusive to avoid disturbing nesting birds. If this is not feasible, breeding bird checks should be undertaken by an ecologist no more than 48 hours in advance of works commencing. If nesting was confirmed works would need to be postponed until checks had fledged the nest. One integral bird nesting unit (swift, sparrow or general purpose) will be installed under the eaves of each dwelling, these being positioned on shaded elevations. New woody habitat will also be created as part of the scheme.
Badgers	Avoid death/injury of badgers during construction phase	Position timber scaffold boards in any steep sided excavations left uncovered overnight (during construction) to allow any trapped animals to escape. Cap off pipework at the end of each working day.
Non-native invasive species	Avoid spread of non-native and Schedule 9 listed plant species which would constitute a legal offence under Wildlife and Countryside Act (1981) as amended.	The CEMP should include specific measures to ensure Schedule 9 and non-native species are not spread. Swamp stonecrop should be removed and disposed of as controlled waste) while the Rubus sp should also be eradicated. All plant and machinery should be cleaned before entering and leaving site.

5 References

Collins J (2023). *Bat Surveys Good Practice Guidelines*. Fourth Edition. BCT, London

CIEEM (2019). *Advice note on the lifespan of ecological reports and surveys*. CIEEM, Ampfield.

Harris, S., Cresswell, P., and Jefferies, D., (1989). *Surveying Badgers*. An occasional publication of the Mammal Society.

Reason PF and Wray S (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.1*. CIEEM, Ampfield.

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GCN Report

Technical Report



SureScreen Scientifics

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GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
GCN25 3453	Miry Meadow Pond 1		Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Chelsea Warner

Approved by: Consuela Sopronyi

Methodology

The samples detailed above have been analyzed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample tube which then undergoes DNA extraction. The extracted sample is then analyzed using real-time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded. Analysis of eDNA requires attention to detail to prevent the risk of contamination. True positive controls, negative controls, and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added analytical security.

SureScreen Scientifics Ltd is ISO9001 accredited and participates in Natural England's proficiency testing scheme for GCN eDNA testing.

Interpretation of Results

Sample Integrity Check:

When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results. Any samples which fail this test are rejected and eliminated before analysis.

Degradation Check:

Pass/Fail. Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

Inhibition Check:

Pass/Fail. The presence of inhibitors within a sample is assessed using a DNA marker. If inhibition is detected, samples are purified and re-analyzed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result:

Presence of GCN eDNA (Positive/Negative/Inconclusive)

Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.

Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with the WC1067 Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.

Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

Inconclusive: Controls indicate inhibition or degradation of the sample, resulting in the inability to provide conclusive evidence for GCN presence or absence.

