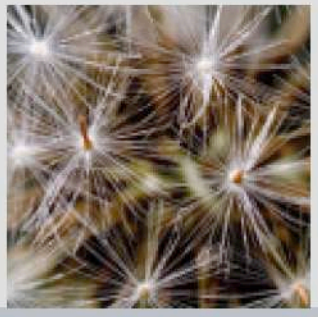
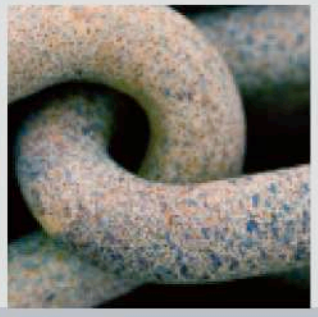
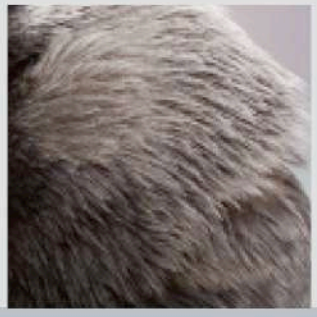
Hemingfield, Barnsley Additional Ecological Surveys Report

July 2024

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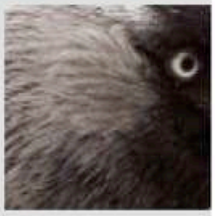

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Baker Consultants is an ecology and sustainability consultancy. We work in terrestrial, freshwater and marine environments, providing a range of services to industry, government, developers, public services and utilities.

Baker Consultants comprises a highly experienced team of professional ecologists. We do wildlife surveys - but they are only the first steps in the process for most projects. We are also involved in ecological assessment, environmental law, biodiversity management and design planning.

We don't just work with wildlife, because we know that communication with clients, design teams and conservation bodies is the key to project success. Explaining the implications of survey data, and interpreting legislation, policy and best practice is one of our strengths. We help decisions to be made and actions taken, allowing constraints to be kept to a minimum and project risks to be managed.

Our approach is scientific, pragmatic and creative. Alongside tried and tested methods, we seek to innovate, introduce clients to new ways of thinking and always deliver sound commercial awareness. You will find us honest and approachable, but we're not afraid to be robust and challenging - or to ask difficult questions.

We do believe in nature conservation. But we also believe in good development, well delivered. We know that, with our input, projects and plans can provide benefits for both nature and people.

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Unless otherwise stated in this document, the assessments made assume that the study site referred to will continue to be used for its current purpose without significant change. The assessment, recommendations and conclusions contained in this document may be based upon information provided by third parties and upon the assumption that the information is relevant, correct and complete. There has been no independent verification of information obtained from third parties, unless otherwise stated in the report.

Where field investigations have been carried out, these have been restricted to the agreed scope of works and carried out to a level of detail required to achieve the stated objectives of the services. Natural habitats and species distributions may change over time and further data should be sought following any significant delay from the publication of this document.

Report Contents

1 Summary

1.1 The Proposed Development

1.1.1 This Technical Note supports the Ecological Appraisal[1] which was submitted for the site known as Hemingfield, Barnsley, related to an application for outline planning permission for the demolition of existing structures and the erection of residential dwellings with associated infrastructure and open space.

1.1.2 This document provides a summary of the methods and results of additional field surveys, which could not be undertaken prior to submission of the planning application due to seasonal constraints.

1.1.3 The results of these additional field surveys build upon the baseline ecological data and initial survey results which were undertaken in 2023.

1.2 Ecological Receptors

1.2.1 The site continues to offer a low level of conservation interest including:

- Habitats of 'Site' geographical value for breeding birds
- Foraging and commuting habitat of 'Local' geographical value for bats

1.3 Recommended Actions

1.3.1 Ecological impacts on features of interest will need to be avoided, or appropriate mitigation put in place to reduce the effects of development.

[1] Baker Consultants (2024). *Hemingfield, Barnsley Ecological Appraisal*. Unpublished report for Ptarmigan Land North Ltd.

2 Introduction

2.1 Site Description

2.1.1 The site is located to the north and east of Hemingfield Road, to the north of Hemingfield, Barnsley at Ordnance Survey grid reference SE393018. Adjacent to the site boundary there are linear parcels of deciduous woodland which run along Hemingfield Road to the west and the A6195 to the north. The wider landscape consists of mostly agricultural land, with the village of Hemingfield to the south and a larger area of deciduous woodland further to the west.

2.1.2 The site itself comprises agricultural land and hedgerows with a collection of farm buildings in the south west corner (Figure 1).

Figure 1. Site Location

2.2 Study Scope

2.2.1 Baker Consultants was commissioned by the client in 2024 to undertake the following works in relation to the site:

- One additional 'spring' deployment of static bat detectors;
- Breeding bird surveys;
- eDNA survey for great crested newts; and

- Hedgerow Survey.

2.2.2 This report takes into account standard guidance from a variety of sources including the Chartered Institute of Ecology and Environmental Management [2] [3] [4], British Standards Institution [5], and www.gov.uk [6].

2.2.3 The report considers, in particular, potential effects on the following biodiversity features:

- European Protected Species
- National Protected Species
- Habitats and Species of Principal Importance for Conservation
- Habitats and species of local interest

[2] CIEEM (2022, v1.2). Guidelines for Ecological Impact Assessment In The UK And Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
[3] CIEEM (2015). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
[4] CIEEM (2017). Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management, Winchester.
[5] BSI (2013). BS42020:2013 Biodiversity – Code of Practice for Planning and Development
[6] https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications

3 Methods

3.1 Surveyor Qualifications and Experience

3.1.1 The additional survey work was carried out by Senior Ecologist, Isabel Syddall. Isabel has over four years' professional experience in consultancy and has carried out numerous hedgerow and protected species surveys in this time and, before this, as a volunteer for her local Wildlife Trust.

3.1.2 Wherever appropriate during surveys, Natural England's Standing Advice on Protected Species [7] was taken into account, along with a wide range of other best practice guidance on survey methods. These are referenced in the text below. However, the professional judgement of the surveyor was also applied in relation to the site conditions and target species/habitats being considered. This may have required changes to the published guidance.

3.2 Bat Survey

Automated Bat Survey

3.2.1 Wildlife Acoustics SM Mini automated bat detectors were deployed within the development site according to the details provided below in Table 1. These detectors record nearby bat calls automatically, with each digital file being appropriately date and time-stamped. After recording, the data collected is downloaded for analysis on computer

3.2.2 The locations of the detectors are shown in Figure 2 below.

Table 1. Automated Detector Surveys

Detector ID	Map Ref.	Deployment Start	Dates Analysed	
			Bats	Birds
SMU01410 SMU01229	3a 3b	17/04/2024	20/04/2024 – 27/04/2023	17/04/2024 – 29/04/2024
SMU01172 SMU10161	4a 4b	13/05/2024	-	13/05/2024 – 04/06/2024

[7] https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications

Figure 2. Static Detector Locations 2024

Bat Call Analysis

3.2.3 Bat call data was analysed using Wildlife Acoustics Kaleidoscope software, which separated the recording into segments of up to 15 seconds, to be identified to species/group and counted.

3.2.4 The identification of bat calls was based on the experience of the analysts and reviewers (including bat survey licence holders). This experience was backed up by the use of an identification spreadsheet and published guidance on recognised call parameters *8 9 10 11*.

3.3 Amphibians

Environmental DNA surveys:

3.3.1 A pond located 218m north of the site, within a wooded copse, was surveyed for the presence or absence of great crested newts on 17th April 2024 using an eDNA (environmental DNA) sampling kit, in reasonable weather conditions (Figure 3). The field sampling protocol followed the steps outlined in the Technical Guidance *12*, with 20

8 Russ, J. (1999). The Bats of Britain and Ireland: Echolocation calls, sound analysis and species identification. Alana Books.
9 Vaughan, N., Jones, G. & Harris, S. (1997). Identification of British Bat Species by Multivariate Analysis of Echolocation Call Parameters. The International Journal of Animal Sound and its Recording 7: 189-207.
10 Middleton, N., Froud, A. & French, K. (2014). Social Calls of the Bats of Britain and Ireland. Pelagic Publishing, Exeter.
11 Russ, J. (2012). British Bat Calls: A Guide to Species Identification. Pelagic Publishing, Exeter.
12 Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R. A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. and Dunn, F. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt.

samples of pond water being taken from around the pond edge before being mixed and stored in sample tubes. Individual kits were used for each pond sample to prevent cross-contamination.

3.3.2 The collected samples were then sent to a Natural England-approved laboratory for analysis. As eDNA persists in waterbodies (excluding sedimentary deposits) for a relatively short period of time, collected samples should contain the DNA fragments of great crested newts that were recently present within the waterbody.

Figure 3. Pond Location

3.4 Birds

3.4.1 The breeding birds survey broadly followed the 'Common Bird Census' method [13]. This technique involves walking the site during the bird breeding season, while watching and listening for birds. The location and behaviour of every bird recorded during this survey is then mapped using a standardized system of notation.

3.4.2 The surveyor assessed all habitats on the site for evidence of breeding birds, including specific features such as buildings which may be used by some species.

3.4.3 Three visits were undertaken to each part of the site during the bird breeding season in

Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.
[13] Marchant, J.H. (1983). Common Bird Census Instructions. British Trust for Ornithology, Tring.

suitable weather conditions. The visits were made either in the early morning or evening, when birds are most active. The surveyors, dates, times and weather conditions during these surveys are detailed in Table 2.

Table 2. Breeding Birds Survey Conditions

Date	Surveyor	Times (hrs)	Weather conditions	Sunrise
17/04/2024	IS	07:00 – 08:05	4-6ºC, dry, sunny, 0–25% cloud cover, wind BF1	06:01
13/05/2024	IS	06:09 – 07:11	13-15ºC, dry, 50-25% cloud cover, wind BF0	05:07
04/06/2024	IS	05:43 – 06:39	12ºC, dry, 90% cloud cover, wind BF2	04:41

Automated Bird Survey

3.4.4 In order to supplement the breeding bird survey data SM Mini automated detectors which were deployed to record bats were also programmed to record birds within the site. The details of these deployments are provided in Table 1 with their locations shown in Figure 2 above. The survey was undertaken in accordance with the bird survey guidelines *14* and Abrahams (2018)*15*, Brandes (2008)*16*, Evans *et al*. (1998)*17* and Zwart *et al*. (2014)*18.*

3.4.5 The acoustic frequency range 180 Hz to 10 kHz was recorded for 24 hours to create a soundscape dataset including both the dawn and dusk chorus times. The deployment period was a total of 69 days (four deployments over two periods). One minute acoustic recordings were saved at 10-minute intervals.

3.4.6 After collection, the acoustic recordings were analysed to quantify the number of bird vocalisation and the bird species type. The audio recordings were processed using Kaleidoscope Pro software, with bird vocalisation phrases then being subject to identification through using Cornell Lab @Birdnet Analyzer *19*.

3.5 Hedgerows

3.5.1 Isabel Syddall surveyed the hedgerows on site on 17th April 2024, according to Hedgerow Regulations (1997) standards *20*. This involved walking the length of hedgerows and recording factors such as size, structural species present, associated features and ground-based species.

14 Bird Survey & Assessment Steering Group. (2023). Bird Survey Guidelines for assessing ecological impacts, v.1.1.1. https://birdsurveyguidelines.org
15 Abrahams, C. (2018). Bird bioacoustic surveys - developing a standard protocol. *In Practice*, 102, 20-23.
16 Brandes, T. S. (2008) 'Automated sound recording and analysis techniques for bird surveys and conservation.' *Bird Conservation International*, 18 pp. S163-S173.
17 Gilbert, G., Gibbons, D. W. and Evans, J. (eds.) *Bird Monitoring Methods: a manual of techniques for key UK species*. Sandy, RSPB.
18 Zwart, M. C., Baker, A., McGowan, P. J. K. and Whittingham, M. J. (2014) 'The Use of Automated Bioacoustic Recorders to Replace Human Wildlife Surveys: An Example Using Nightjars.' *Plos One*, 9(7) pp. 1-8.
19 https://github.com/kahst/BirdNET-Analyzer
20 Defra (2007). Hedgerow Survey Handbook. A standard procedure for local surveys in the UK (2nd edn.). Defra, London.

4 Results

4.1 Study Limitations

4.1.1 It is important to note that, even where data is returned for a desk-study, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest since the area may simply be under-recorded. Equally, due to the level of recording, some species should be considered more frequent than indicated by the records provided within a desk-study.

4.1.2 Whilst every effort was made in the field survey to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment. Also, natural and semi-natural habitats are subject to change, species may colonise the site after surveys have taken place and results included in this report may become less reliable over time.

4.1.3 Survey data is generally only considered valid if it is from the current or previous active season. In some cases, surveys up to 3 years old may be considered acceptable by consultees if the habitats have not significantly changed in the intervening period.

4.1.4 Access was available across the site, and weather conditions and time of year were suitable for the scope of the survey.

4.2 Bats

Automated Bat Survey

4.2.1 The combined results of the static detector monitoring from 2023 and 2024 are shown in Table 3 which illustrates the frequency with which bat species occur within and adjacent to the site. The total number of registrations recorded for each bat species is shown in Table 4, which shows the regularity with which they were recorded at fixed points.

4.2.2 The tables show that up to five species of bat are found to use the site at some point, with just common pipistrelle and soprano pipistrelle using it regularly. Both Myotis sp. and noctule were also fairly frequent visitors to the site but in low numbers.

4.2.3 Brown long-eared bat was recorded on detector 1a and 2a in very low numbers; however, it is possible that this species is more widespread than that shown in the results, due to this species' echolocation being quiet and often missed by bat detectors.

4.2.4 The spring 2024 deployments recorded fewer bat registrations overall and fewer species than the 2023 deployments suggesting that the site is not used by bats in the spring.

4.2.5 A similar diversity of species and number of call registrations was recorded across all deployment locations. Overall, the level of bat activity recorded was very low.

Table 3. Bat Diversity and Number of Nights Recorded

Ref.	Season	Myotis sp.	Noctule	Common pipistrelle	Soprano pipistrelle	Brown long-eared bat	No of Species
1a	Summer 2023	5	4	5	5	1	5
1b		1	4	5	4	-	4
2a	Autumn 2023	2	3	5	4	2	5
2b		2	3	5	5	-	4
3a	Spring 2024	1	2	4	2	-	4
3b		-	1	5	2	-	3
Total*		11/30	17/30	29/30	22/30	2/30	

NB. Detectors recorded for a monitoring period of 5 nights per deployment
*Number of nights recorded over a total of 30 monitoring nights.

Table 4. Summary of Bat Species Registrations

Ref.	Season	Myotis sp.	Noctule	Common pipistrelle	Soprano pipistrelle	Brown long-eared bat	Total
1a	Summer 2023	6	24	223	30	3	286
1b		2	23	200	30	-	255
2a	Autumn 2023	4	7	66	17	2	96
2b		2	14	108	20	-	144
3a	Spring 2024	1	5	13	2	-	20
3b		-	2	82	6	-	89
Total*		15	75	692	105	5	892
Total %		1.7%	8.4%	77.6%	11.8%	0.6%	

***NB.** Number of bat passes over total 30 nights recording

4.3 Great Crested Newts

Environmental DNA

4.3.1 The eDNA results returned 0/12 results for presence of great crested newt DNA, a negative result showing they are not present in the pond on the site (Appendix 1).

4.3.2 Given that GCN are not using the pond to the north of the site, no impacts on this species are anticipated, and therefore, they are no longer considered within the report.

4.4 Birds

4.4.1 A total of 23 species of birds were recorded during the site surveys on or flying over the site. Of these just one species, swallow, were confirmed to be breeding, six were assessed to be probably breeding and twelve possibly breeding. Four species including black-headed gull, carrion crow, jackdaw and pied wagtail were considered to be non-breeding visitors to the site due to only being recorded flying over the site. Species such as blue tit, great tit and house sparrow were recorded using the site frequently however the site lacks mature trees that possess cavities which these species prefer to nest in so these were assessed as possible breeders.

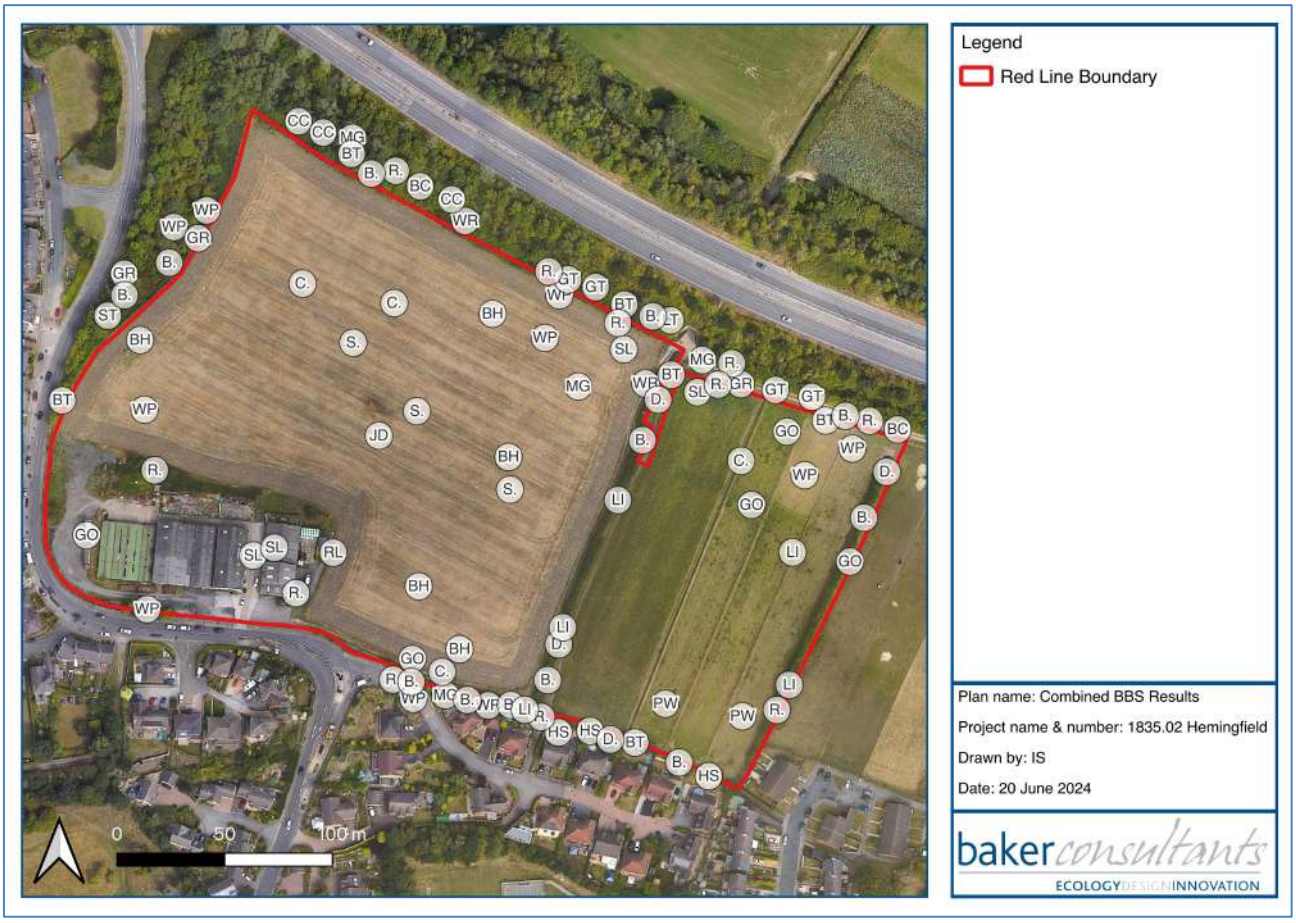
4.4.2 Table 5 below provides a summary of the bird species recorded within the study area during the breeding bird surveys. Figure 4 below shows the locations of birds recorded during the combined surveys.

Table 5. Breeding Bird Survey Results

BTO Code	Common and Scientific Name	Conservation and Legislative Status	Breeding Habitat	Breeding status
B.	Blackbird *Turdus merula*	-	Hedgerows/Scrub	**Probable**
BC	Blackcap *Sylvia atricapilla*	-	Scrub	Possible
BT	Blue tit *Cyanistes caeruleus*	-	Hedgerows	Possible
C.	Carrion crow *Corvus corone*	-	-	Non-breeding
CC	Chiffchaff *Phylloscopus collybita*	-	Hedgerows/Scrub	Possible
D.	Dunnock *Prunella modularis*	Amber, SPI	Hedgerows/Scrub	**Probable**
GO	Goldfinch *Carduelis carduelis*	-	Hedgerows/Scrub	Possible
GR	Greenfinch *Chloris chloris*	Red	Hedgerows/Scrub	Possible
GT	Great tit *Parus major*	-	Hedgerows	Possible
HS	House sparrow *Passer domesticus*	Red, SPI	Hedgerows	Possible
JD	Jackdaw *Corvus monedula*	-	-	Non-breeding
LI	Linnet *Linaria cannabina*	Red, SPI	Hedgerows/Scrub	**Probable**
LT	Long tailed tit *Aegithalos caudatus*	-	Hedgerows/Scrub	Possible
MG	Magpie *Pica pica*	-	Hedgerows/Scrub	Possible
PW	Pied wagtail *Motacilla alba*	-	-	Non-breeding
R.	Robin *Erithacus rubecula*	-	Hedgerows/Scrub	**Probable**
RL	Red-legged partridge *Alectoris rufa*	-	Farmland	Possible
S.	Skylark *Alauda arvensis*	Red, SPI	Farmland	**Probable**
SL	Swallow *Hirundo rustica*	-	Buildings/Structures	**Confirmed**
ST	Song thrush *Turdus philomelos*	Amber, SPI	Hedgerows/Scrub	Possible
WP	Woodpigeon *Columba palumbus*	Amber	Hedgerows/Scrub	Possible
WR	Wren *Troglodytes troglodytes*	Amber	Hedgerows/Scrub	Possible

Key – SPI – Species of Principal Importance for Conservation (NERC Act), Amber – Species of Moderate Conservation Concern, Red – Species of High Conservation Concern, Sch 1 – Special Nest Protection Under Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended)

Figure 4. Combined Breeding Bird Survey Results



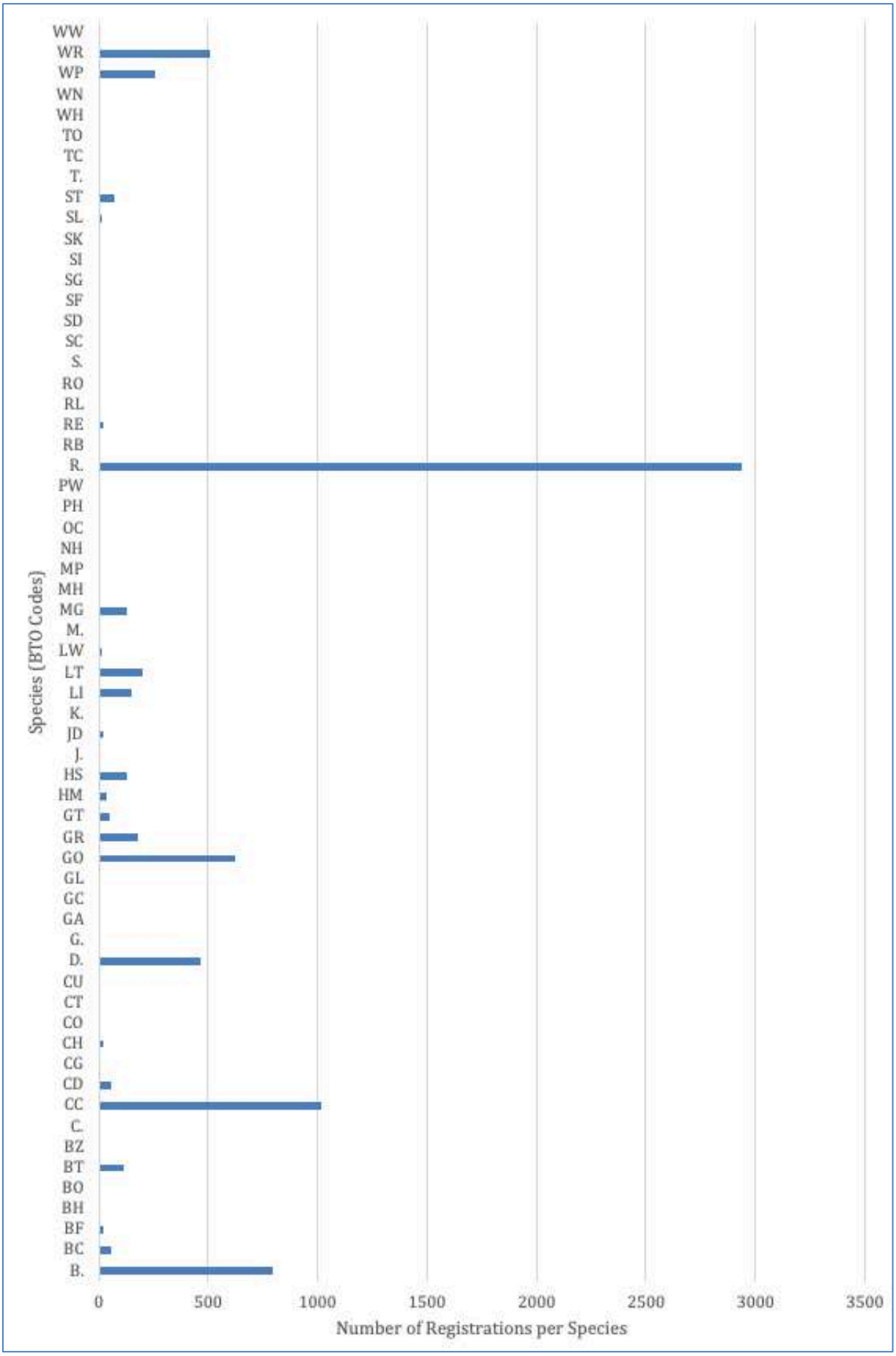
Automated Bird Survey

4.4.3 A total of 8,039 bird vocal registrations and 61 different bird species were identified during the automated detector survey, conducted during the bird breeding season. The highest number of vocalisations recorded were of robin (2,936), chiffchaff (1015), blackbird (795), goldfinch (625), wren (511), dunnock (468), woodpigeon (259) and long-tailed tit (201).

4.4.4 Both detectors recorded one black headed-gull vocalisation each and one detector recorded three vocalisations of gadwall. Both of these species are listed as important features of the Dearne Valley SSSI designation.

4.4.5 The total number of vocalisations recorded for each bird species on two detectors over a 34-day period is shown in Figure 5 below.

Figure 5. Total Number of Vocal Registrations per Species



4.5 Hedgerow Survey

4.5.1 None of the existing hedgerows on site meet the ecological criteria for 'Important Hedgerows' under the Hedgerow Regulations 1997. The survey results are detailed in Appendix 2.

5 Assessment

5.1 National Policy

5.1.1 The National Planning Policy Framework (NPPF 2023) sets out the Government's planning policies for England and how these should be applied. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, combining economic, social and environmental objectives, and 'protecting and enhancing our natural --- environment; including ---helping to improve biodiversity'. Within this framework, the requirements in relation to biodiversity are included within several policies. The two most relevant to individual planning decisions are Paragraphs 180 and 186, shown below:

180. Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; etc…

186. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate

5.1.2 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on every public authority to have regard to conserving biodiversity. Section 41 of the same Act requires that the Secretary of State must publish a list of the living organisms and types of habitats that are of 'Principal Importance' for the purpose of conserving biodiversity. The Secretary of State must take steps, as appear reasonably practicable, to further the conservation of those living organisms and habitats in any list published under this section. The list of species and habitats of principal importance currently includes 943 species and 56 habitats.

5.2 Local Policy

5.2.1 The Local Plan along with the NPPF sets out how to manage sustainable development in the area.

5.2.2 The Barnsley Local Plan, which was adopted in 2019, includes Policy GI1 Green Infrastructure which states: *we will protect, maintain, enhance and create an integrated network of connected and multi-functional Green Infrastructure assets that: ... Enhance biodiversity and landscape character.*

5.3 Legislation

5.3.1 The Wildlife and Countryside Act 1981 (as amended) is the primary legislation which protects native animals, plants and habitats in the UK. The Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also makes it an offence to intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant.

5.3.2 European Protected Species (EPS), such as bats and great crested newts, are protected under both the Wildlife and Countryside Act 1981 (as amended) and under the Conservation of Habitats and Species Regulations 2017 (as amended). Taken together, these make it an offence to:

a) Deliberately capture, injure or kill a EPS;

b) Deliberately disturb any EPS, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.

c) To be in possession or control of any live or dead EPS or any part of, or anything derived from a EPS;

d) Damage or destroy a breeding site or resting place of a EPS;

e) Intentionally or recklessly obstruct access to any place that a EPS uses for shelter or protection;

f) Intentionally or recklessly disturb a EPS while it is occupying a structure or place that it uses for shelter or protection.

5.4 Bats

5.4.1 Bats and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2017 (as amended). Seven bat species are also listed as Species of Principal Importance under the provisions of the NERC Act 2006.

5.4.2 The results of the additional 2024 spring deployment are consistent with the previous 2023 results and therefore the assessment set out below remains accurate for the site.

5.4.3 In undertaking an evaluation of the bat interest at the site [21] [22], the following factors can be taken into account: the value of roost types, commuting routes and foraging habitats; the rarity of the species involved; the approximate number of bats using them; the proximity to known roosts; and the nature and complexity of landscape features. The criteria used to assess the importance of the bat assemblage on this site are given in Table 16 below.

Table 6. Assessing the Importance of a Bat Assemblage

Geographic Rarity Category (points/species)	**Northern England**
Widespread geographies (score 1)	Common pipistrelle Soprano pipistrelle Brown-long-eared bat
Widespread in many geographies, but not as abundant in all (score 2)	Natterer's bat Whiskered bat Daubenton's bat Brandt's bat Noctule
Local Importance Threshold	<10
County Importance Threshold	10
Regional Importance Threshold	12
National Importance Threshold	15

5.4.4 With reference to the above table, the site is considered to be of Local value for bats. Results of the bat surveys showed that the site is used regularly by a low number of common and widespread species.

5.4.5 A total of five 'widespread' species were recorded using the site, however, species from the Myotis genus were not individually identified due to the difficulty in identifying these

21 Wray, S., Wells, D., Long, E., Mitchell-Jones, T. (2010). Valuing Bats in Ecological Impact Assessment, IEEM In-Practice pp23-25.
22 Reason, P.F and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.

species by call alone. It has been assumed that a maximum of one Myotis species is likely to have been present on site. This assumption is based on the desk study data which identifies Daubenton's in the local area, the overall low number of Myotis registrations over the deployment period (14), and the habitat types present on site and within the local area which are unlikely to support the rarer Myotis species.

5.4.6 Bat activity was consistently low throughout the site with the highest number of registrations (286) associated with the woodland belt adjacent to the northern boundary, which acts as a dark corridor for commuting bats.

5.4.7 Increases in lighting within the northern section of the development site could have an adverse impact on the function of the habitats used by bats if appropriate mitigation were not put in place. Some species are light adaptive and likely to continue to use the site, for example, common pipistrelle and noctule, but other species such as Myotis are more likely to adversely impacted by an increase of light. However, these species are only an occasional visitor to the site and in very low numbers. The rest of the site is already well-lit from street lights to the south and security lighting at the existing farm buildings.

5.4.8 The loss of small sections of the hedgerows at TN2 & 6 to facilitate access could have an limited adverse impact on bats without suitable mitigation / compensation. However, such minor initial habitat severance through the loss of hedgerow is unlikely to have harmful affects towards common and soprano pipistrelle bats, and the habitat creation measures will prevent adverse impact on other species. Additionally, the current plans allow for enhancement of the hedgerow at TN1 and provisions of seven newly planted species-rich native hedgerows, which will significantly enhance the hedgerow resource and provide new habitats for bats across the site. Mitigation / compensation measures for bats are detailed in Section 6.

5.5 Birds

5.5.1 All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to intentionally or recklessly disturb them while they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

5.5.2 The Birds of Conservation Concern initiative [23] publishes lists of Red and Amber species. Birds on the Red list are of high conservation concern within the UK, while those on the Amber list are of medium conservation concern. In addition, a number of bird species are also included as Species of Principal Importance under the provisions of the NERC Act 2006.

5.5.3 In 2023 a total of 58 species were recorded using the acoustic detectors between 27th July – 4th September. The species list includes 12 species that are BoCC red listed and a further 20 that are BoCC amber listed. In 2024 a total of 64 species were recorded using the acoustic

[23] Stanbury, A.J. et al (2021). Birds of Conservation Concern 5: The status of all regularly occurring birds in the UK, Channel Islands and the Isle of Man. British Birds 114, pg 723-747.

detectors between 17th – 29th April and 13th May – 4th June. Of the 2024 species list, a total of 10 species are BoCC red listed and a further 21 are amber listed. The species list includes some species that are considered to have been flying over only, given the species and type of habitat available. There is however suitable breeding and foraging habitat for many of the more notable farmland species, such as Linnet and Dunnock, within the hedgerows, arable field, scrub and existing farm buildings and these species were recorded frequently during the breeding bird surveys.

5.5.4 A small number of gadwall and black-headed gull vocalisations were recorded by the static detectors in 2024. Both of these species are listed as important features of the Dearne Valley SSSI which lies 1.6km to the north east of the development site. Given the low numbers of registrations these species are thought to be flying over the site only. They were not recorded using the site during any of the additional surveys and black-headed gull was recorded flying over the site during the breeding bird surveys.

5.5.5 A total of 23 bird species were recorded during the breeding bird surveys (Table 5). The eight notable species present are set out in Table 7 below.

Table 7. Notable Bird Species

Common Name	Scientific Name	Legislative Status	Breeding Status
Dunnock	*Prunella modularis*	Amber, SPI	**Probable**
Greenfinch	*Chloris chloris*	Red	Possible
House sparrow	*Passer domesticus*	Red, SPI	Possible
Linnet	*Linaria cannabina*	Red, SPI	**Probable**
Skylark	*Alauda arvensis*	Red, SPI	**Probable**
Song thrush	*Turdus philomelos*	Amber, SPI	Possible
Woodpigeon	*Columba palumbus*	Amber	Possible
Wren	*Troglodytes troglodytes*	Amber	Possible

Key:
BoCC Listed as red or amber under the Birds of Conservation Concern initiative
Sect.41 Section 41 species on Natural Environment and Rural Communities Act (2006)
WCA1 Listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)

5.5.6 To assess the overall breeding bird assemblage, a published method [24] for assessing the ornithological interest of sites has been used, whereby the importance of a site is defined by the number of breeding species present (confirmed and probable). These have been adapted to fit the geographical levels used by CIEEM. It is these adapted criteria that are shown in Table 8 below:

Table 8. Breeding Birds Site Evaluation

Number of breeding bird species	Site importance
<13	Site
13-25	Local
25 – 49	District
50 – 69	County
70 – 84	Regional
>85	National

[24] Fuller, R.J. (1980). A method for assessing the ornithological interest of sites for conservation. Biological Conservation 17:229-239.

5.5.7 A total of 7 species out of the 23, have been assessed as either confirmed or probably breeding on the site, with a further 12 possibly breeding. Using the adapted version of Fuller's criteria, the site is therefore considered to be of Site importance. Weight is added to this evaluation by the fact that of those species possibly, probably or confirmed to be breeding on the site four are red-listed species of high conservation concern and a further four are amber-listed species of moderate conservation concern.

5.5.8 Of the notable bird species only dunnock, linnet and skylark are probably breeding on site. These species were recorded in low numbers on all survey visits, with just one pair of skylark and dunnock noted and two likely pairs of linnet. Skylark will be displaced as a result of the proposed development. However, suitable breeding habitat is present within the surrounding area and given the low numbers of individuals recorded, impacts above site level on this species are not anticipated.

5.5.9 In general, the use of the site by birds is typical of lowland farmland in England. The majority of birds were observed within the boundary hedgerows. These habitats support breeding birds, but also serve as important connective habitat linking to the wider landscape. Whilst minor hedgerow loss is unavoidable as part of the proposed development, newly planted hedgerows will be provided to mitigate the loss of nesting habitat. Enhancement measures are proposed which will improve the quality of nesting habitat.

5.5.10 Swallows were confirmed to be breeding within buildings 4 and 5. The demolition of these buildings and any other vegetation removal or construction works, if undertaken during the bird breeding season, could potentially damage or disturb active nests and result in an offence under the legislation. Impacts to consider include damaging or removing breeding sites, disturbing birds and their young, and changing access to structures with active nests. Compensation measures for the loss of suitable nesting habitat for this species are detailed in Section 6.

5.5.11 Overall, the species using the site and the adjacent areas are considered unlikely to be significantly affected by the development. Existing boundary features will be largely retained and many species will actively benefit from the newly created hedgerows, enhancement of the existing boundary habitats and through active management.

6 Recommendations

6.1 Introduction

6.1.1 The recommendations below for further survey and mitigation are based on the results and assessment set out above, taking into account standard published guidance from a number of sources (as referenced through the report), including the GOV.UK information on Planning and Development [25] [26].

6.1.2 Individual Local Planning Authorities have their own requirements for ecological information to support the validation and assessment of planning applications. These requirements often vary widely between authorities and sometimes do not accord with national guidance - including that issued by the statutory nature conservation organisations. As a result we have applied the more consistent national guidance to our survey and mitigation recommendations set out below.

6.2 Mitigation Measures

6.2.1 Mitigation measures should be considered through the masterplan design and planning application process, with actions during the construction and operation phases agreed and established in a Construction Environmental Management Plan (CEMP) and/or Landscape and Ecology Management Plan (LEMP). This whole process from proposal to implementation should consider the 'mitigation hierarchy' – avoid, reduce, compensate and enhance:

- Aim to avoid negative effects, e.g. by redesigning the scheme
- If this isn't possible, use mitigation measures to reduce the impacts
- Use compensation measures if there are still negative impacts, e.g. by replacing habitats
- Seek opportunities to make enhancements for biodiversity

Bats

6.2.2 The results of the additional spring deployment concur with the previous assessment; the site is of Local value for bats. Therefore, the mitigation measures set out in the Baker Consultants Ecological Appraisal (2024), repeated below, are still appropriate.

6.2.3 A dark corridor for movement along the woodland edge habitat should be maintained, in particular along the woodland located on the northern boundary of the site, to preserve a commuting route for bats.

6.2.4 A sensitive lighting scheme should be incorporated into the design following guidelines set out in BCT's artificial lighting guidance [27]. This should include the following key

25 https://www.gov.uk/topic/planning-development/protected-sites-species
26 https://www.gov.uk/guidance/natural-environment#biodiversity-and-ecosystems
27 Institute of Lighting Professionals, ILP and Bat conservation Trust, BCT (2023). Bats and Artificial Lighting at Night.

measures:

- Pedestrian lighting should be as low intensity as possible. Overhead lighting should be avoided for lighting footpaths to prevent light spill.
- Light spill can also be prevented on the site by using directional lighting features e.g. use of appropriate column heights and horizontally mounted luminaires, use of LED luminaires and warm light sources (2700Kelvin or lower) with peak wavelengths >550nm.

6.2.5 During works, lighting must be kept to a minimum to avoid any adverse impacts on the diversity or numbers of bats within the site – this includes night working or illumination of the site, or parts of the site, for security purposes. Other measures to enhance the site for bats may include bat boxes or bat bricks for roosting, and the native planting mentioned above, to preserve and extend the current foraging and commuting value of the site.

6.2.6 If bats are unexpectedly discovered after development has started, then all work that could harm bats or damage/obstruct their roosts must stop. Expert help should be sought as soon as possible from a qualified and licensed ecologist, before works continue.

Birds

6.2.7 To avoid and reduce potential impacts on birds, the design of the proposed development should avoid valuable bird habitats and retain, as far as possible, suitable habitats in greenspace within the development.

6.2.8 To replace the loss of nesting habitat for swallow within the farm buildings which are to be demolished, species-specific external nest boxes and/or integrated swallow bricks should be provided within a proportion of newly built housing.

6.2.9 Impacts on nesting birds should be avoided in particular, by carrying out site clearance and similar operations outside of the bird breeding season (April- August). Construction activities that might directly impact upon breeding birds should hence be limited to the September-February period.

6.2.10 If the timing or location of work activities cannot be changed to avoid affecting birds, then birds may be prevented from starting to nest by blocking access to nest sites, clearing vegetation or structures used for breeding, or using deterrents they can see or hear, e.g. tapes or flashing lights. These techniques cannot be used, however, once a nest is established.

Appendix 1: eDNA Results

Client: Robin Denton,
Baker Consultants

ADAS
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: 01159 229249
Email: Helen.Rees@adas.co.uk

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Sample ID: ADAS-3076	Condition on Receipt: Good	Volume: Passed
Client Identifier: Pond 1	Description: pond water samples in preservative	
Date of Receipt: 22/04/2024	Material Tested: eDNA from pond water samples	

Determinant	**Result**	**Method**	**Date of Analysis**
Inhibition Control[†]	2 of 2	Real Time PCR	25/04/2024
Degradation Control[§]	Within Limits	Real Time PCR	25/04/2024
Great Crested Newt*	0 of 12 (GCN negative)	Real Time PCR	25/04/2024
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)[#]	4 of 4	Real Time PCR	As above for GCN

Report Prepared by:	Dr Helen Rees	Report Issued by:	Dr Ben Maddison
Signed:		Signed:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	26/04/2024	Date of issue:	26/04/2024

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for great crested newt if all of the replicates are negative; positive for great crested newt if one or more of the replicates are positive.*

[†] Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not achieved, the sample is considered inhibited and is diluted as per the technical advice note prior to amplification with great crested newt primer and probes.

[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.

[#]Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

Appendix 2: Hedgerow Survey Results

Hedgerow Regulations (1997) - Hedgerow Evaluation Form

Hedgerow No./Name	1
Is hedgerow more than 30years old[1]	Yes
Length (m)[2]	100
No. of 30m Sections to survey (1 section per 100m)	1
Total length of gaps (m)	0
Length of ditch (m)	0
Length of bank/wall (m)	30
Adjacent to public right of way[4] (Yes/No)	Yes
Parallel hedge within 15m (Yes/No)	No
Rare or Protected species present (Yes/No)	No
If Yes, specify	
Points for Connections[3] to:	
Other hedgerows (1 point each)	1
Ponds (2 points each)	0
Broadleaved woodland (2 points each)	0
Additional Information:	
Average height (m)	1.5
Average width (m)	1.0
Shape/Recent Management:	
Clipped and dense	Yes
Unclipped	No
Mechanically cut	Yes
Overgrown	No
Leggy	No
Layed	No
Other (specify)	

Notes:

[1] A hedgerow will not qualify as important if less than 30 years old.

[2] For the Regulations to apply, a hedgerow must have a continuous length of at least 20m or meet another hedgerow at each end or be a stretch of hedgerow forming part of a larger hedgerow. Any gap not exceeding 20m or that has resulted from a contravention of these Regulations shall be treated as part of the hedgerow. Boundaries of dwelling houses do not qualify.

[3] A hedgerow is connected if it meets one of the features above or has a point within 10m of it and would meet it if the line of the hedgerow continued. A hedgerow which meets another hedgerow is to be treated as ending at the point of intersection or junction.

[4] Includes footpaths, bridleways, byways open to all traffic and roads used as public paths. Does not include highways.

Criterea for determining Important Hedgerows

Hedgerow No.	1
Calculations	
Total No. of standards	0
No. of standards per 50m	0.0
Percentage gaps	0.0
Percentage ditch	0.0
Percentage bank/wall	30.0
Connection points score	1.0
Average No. of woody species	6.0
Associated Features	
Bank or Wall ≥ 50% of hedgerow length	No
Gaps total ≤ 10% of hedgerow length	Yes
At least 1 standard per 50m	No
At least 3 woodland groundflora species	No
Ditch ≥ 50% of hedgerow length	No
Connections scoring 4 or more points	No
Parallel hedge within 15m	No
Assessment Criterea	
Rare or Protected species present	No
At least 7 woody species	No
At least 6 woody species and at least 3 associated features	No
At least 6 woody species including black poplar, large-leaved lime, small-leaved lime or wild service tree	No
At least 5 woody species and at least 4 associated features	No
Adjacent to a public right of way with at least 4 woody species and at least 2 associated features	No

This hedgerow does not meet the 'ecological' criteria for an Important Hedgerow, however arcaeological and historical criteria have not been assessed here and the hedgerow may still qualify under these criteria.

Hedgerow Regulations (1997) - Hedgerow Evaluation Form

Hedgerow No./Name	2
Is hedgerow more than 30years old[1]	Yes
Length (m)[2]	170
No. of 30m Sections to survey (1 section per 100m)	2
Total length of gaps (m)	0
Length of ditch (m)	0
Length of bank/wall (m)	0
Adjacent to public right of way[4] (Yes/No)	Yes
Parallel hedge within 15m (Yes/No)	No
Rare or Protected species present (Yes/No)	No
If Yes, specify	

Points for Connections[3] to:	
Other hedgerows (1 point each)	1
Ponds (2 points each)	0
Broadleaved woodland (2 points each)	0

Additional Information:	
Average height (m)	2.5
Average width (m)	2.0
Shape/Recent Management:	
Clipped and dense	Yes
Unclipped	No
Mechanically cut	Yes
Overgrown	No
Leggy	No
Layed	No
Other (specify)	

Notes:

[1] A hedgerow will not qualify as important if less than 30 years old.

[2] For the Regulations to apply, a hedgerow must have a continuous length of at least 20m or meet another hedgerow at each end or be a stretch of hedgerow forming part of a larger hedgerow. Any gap not exceeding 20m or that has resulted from a contravention of these Regulations shall be treated as part of the hedgerow. Boundaries of dwelling houses do not qualify.

[3] A hedgerow is connected if it meets one of the features above or has a point within 10m of it and would meet it if the line of the hedgerow continued. A hedgerow which meets another hedgerow is to be treated as ending at the point of intersection or junction.

[4] Includes footpaths, bridleways, byways open to all traffic and roads used as public paths. Does not include highways.

Criterea for determining Important Hedgerows

Hedgerow No.	2

Calculations	
Total No. of standards	0
No. of standards per 50m	0.0
Percentage gaps	0.0
Percentage ditch	0.0
Percentage bank/wall	0.0
Connection points score	1.0
Average No. of woody species	6.5

Associated Features	
Bank or Wall ≥ 50% of hedgerow length	No
Gaps total ≤ 10% of hedgerow length	Yes
At least 1 standard per 50m	No
At least 3 woodland groundflora species	No
Ditch ≥ 50% of hedgerow length	No
Connections scoring 4 or more points	No
Parallel hedge within 15m	No

Assessment Criterea	
Rare or Protected species present	No
At least 7 woody species	No
At least 6 woody species and at least 3 associated features	No
At least 6 woody species including black poplar, large-leaved lime, small-leaved lime or wild service tree	No
At least 5 woody species and at least 4 associated features	No
Adjacent to a public right of way with at least 4 woody species and at least 2 associated features	No

This hedgerow does not meet the 'ecological' criteria for an Important Hedgerow, however arcaeological and historical criteria have not been assessed here and the hedgerow may still qualify under these criteria.

Hedgerow Regulations (1997) - Hedgerow Evaluation Form

Hedgerow No./Name	6

Is hedgerow more than 30years old[1]	Yes
Length (m)[2]	170
No. of 30m Sections to survey (1 section per 100m)	2
Total length of gaps (m)	0
Length of ditch (m)	0
Length of bank/wall (m)	0
Adjacent to public right of way[4] (Yes/No)	Yes
Parallel hedge within 15m (Yes/No)	No
Rare or Protected species present (Yes/No)	No
If Yes, specify	

Points for Connections[3] to:	
Other hedgerows (1 point each)	1
Ponds (2 points each)	0
Broadleaved woodland (2 points each)	0

Additional Information:	
Average height (m)	2.5
Average width (m)	3.0
Shape/Recent Management:	
Clipped and dense	No
Unclipped	Yes
Mechanically cut	No
Overgrown	Yes
Leggy	No
Layed	No
Other (specify)	

Notes:

[1] A hedgerow will not qualify as important if less than 30 years old.

[2] For the Regulations to apply, a hedgerow must have a continuous length of at least 20m or meet another hedgerow at each end or be a stretch of hedgerow forming part of a larger hedgerow. Any gap not exceeding 20m or that has resulted from a contravention of these Regulations shall be treated as part of the hedgerow. Boundaries of dwelling houses do not qualify.

[3] A hedgerow is connected if it meets one of the features above or has a point within 10m of it and would meet it if the line of the hedgerow continued. A hedgerow which meets another hedgerow is to be treated as ending at the point of intersection or junction.

[4] Includes footpaths, bridleways, byways open to all traffic and roads used as public paths. Does not include highways.

Criterea for determining Important Hedgerows

Hedgerow No.	6

Calculations	
Total No. of standards	0
No. of standards per 50m	0.0
Percentage gaps	0.0
Percentage ditch	0.0
Percentage bank/wall	0.0
Connection points score	1.0
Average No. of woody species	6.0

Associated Features	
Bank or Wall ≥ 50% of hedgerow length	No
Gaps total ≤ 10% of hedgerow length	Yes
At least 1 standard per 50m	No
At least 3 woodland groundflora species	No
Ditch ≥ 50% of hedgerow length	No
Connections scoring 4 or more points	No
Parallel hedge within 15m	No

Assessment Criterea	
Rare or Protected species present	No
At least 7 woody species	No
At least 6 woody species and at least 3 associated features	No
At least 6 woody species including black poplar, large-leaved lime, small-leaved lime or wild service tree	No
At least 5 woody species and at least 4 associated features	No
Adjacent to a public right of way with at least 4 woody species and at least 2 associated features	No

This hedgerow does not meet the 'ecological' criteria for an Important Hedgerow, however arcaeological and historical criteria have not been assessed here and the hedgerow may still qualify under these criteria.

baker consultants