

Forest Farm, Chippenham

Environmental Statement

July 2026

Technical appendix F:
Natural heritage



Ecological Impact Assessment

Forest Farm, Chippenham

Gleeson Land

July 2026

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Executive summary

Introduction and approach

EAD Ecology was commissioned by Gleeson Land to undertake an Ecological Impact Assessment (EclA) for a proposed residential development at Forest Farm, Chippenham ('the Site'). The EclA followed Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines (2018) and BS42020:2013. The work was carried out in accordance with CIEEM's Code of Conduct and following standard published methods.

Baseline

Designated sites

There are no designated sites within or immediately adjacent to the Site. One European-designated site was identified within 10km of the Site; Bath and Bradford on Avon Bats Special Area of Conservation (SAC), which is designated for its greater horseshoe bat and Bechstein's bat hibernation roosts, and is located 9.4km to the southwest at its nearest point. The Site is not located within any associated 'Bat Consultation Zone' for the SAC.

Three statutory designated sites of nature conservation importance occur within 5km of the Site, comprising two Sites of Special Scientific Interest and one Local Nature Reserve. A further 15 Local Wildlife Sites (LWS; non-statutory sites) are present within 2km of the site, including Bristol River Avon LWS which is hydrologically linked to the Site.

Habitats

The Site was dominated by fields containing improved grassland. The fields were bordered by fences and hedgerows which were mostly species-rich and many of which had associated ditches. Mature trees were scattered throughout the Site and a small stream was present. The hedgerows, watercourse and broadleaved trees were considered to be the key habitats of moderate ecological importance within the Site.

A complex of farm buildings (Forest Farm) and associated habitats, including standing water, amenity grassland, orchard and tall ruderal, was surrounded on all sides by the Site but lies outside of the application area. This farm complex was included within the wider 'Survey Area' to inform the assessment.

Protected/notable species

The baseline surveys identified the following with respect to protected and/or notable species:

- Suitable habitat for a range of common invertebrate species. The presence of significant populations of notable invertebrate species was considered unlikely.
- No breeding habitat for amphibians was present within the Site. The presence of great crested newt was confirmed within an offsite pond located 155m to the north of the Site. The Site provided suitable terrestrial habitat for great crested newt and common amphibians including common toad.
- A 'low' population of grass snake; a legally-protected Priority Species. Suitable reptile habitat was restricted to the field margins.
- Nesting habitat for widespread bird species, including notable species such as house sparrow, bullfinch, dunnock, song thrush; all Priority Species. The presence of a barn owl nest and/or roost site within one mature tree onsite was assumed. Habitats within the Site were assessed as providing 'intermediate and often transient value to barn owls'. Red kite was considered to have 'probably bred' within the offsite woodland located immediately adjacent to the southwestern

Site boundary. Red kite and barn owl are protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

- No evidence of hazel dormouse was recorded during surveys; the presence of this species was considered highly unlikely.
- Three outlier badger setts were recorded within or on the boundary of the Site. A further three active main badger setts and one annexe sett were also recorded immediately adjacent to, but outside of, the Site boundary. Badgers and their setts are legally protected.
- A confirmed transitional roost for low numbers of soprano pipistrelle and a day roost of low numbers of common pipistrelle bats were recorded within buildings located in the offsite buildings at Forest Farm in the centre of the Survey Area, but outside of the Site application boundary.
- Two trees within or on the Site boundary were confirmed as day roosts for low numbers of pipistrelle bats.
- A minimum of ten bat species were recorded foraging and/or commuting within the Site, although activity was dominated by common pipistrelle. The areas of highest bat activity were generally recorded in the west and south of the Site. Light-averse species recorded during surveys included *Myotis*, long-eared, lesser horseshoe, greater horseshoe and barbastelle bat.
- No evidence of otter was recorded during surveys although periodic use of the watercourse within the Site is assumed. Otter is a legally protected Priority Species and Wiltshire Biodiversity Action Plan (BAP) Species.
- No evidence of water vole or beaver was recorded onsite; the presence of these species was considered very unlikely.
- The Site contained suitable habitat for hedgehog and brown hare; both Priority Species.

Potential effects, avoidance, mitigation, compensation and enhancement

Adherence to Defra pollution prevention guidance and SuDS design would prevent pollution / water quality impacts to Bristol River Avon LWS during/post-construction. No effects on other designated sites of nature conservation importance are predicted.

Construction would result in the loss of improved and poor semi-improved grassland, hedgerow, ditches, trees and scrub. Retained habitats could also be affected through pollution and/or physical damage. Habitat impacts would reduce available habitat for protected and notable species during construction and there is the risk of direct impacts (i.e., killing or injury) to amphibians, reptiles, nesting birds, badger and hedgehog. There would also be the potential for disturbance to roosting and commuting/foraging bats, otter and badger arising from lighting during and post-construction.

The proposed development includes an integrated landscape and ecological design, including the creation of new wildlife habitats within the Site, comprising wildflower grassland, native woodland, scrub, tree and hedgerow planting, and permanently wet 'wildlife ponds' with native marginal planting. An Indicative Landscape Strategy Plan has been produced to show the potential location of these habitats. Retained habitats would be protected through the provision of vegetated 'landscape buffers' of at least 5m either side of hedgerows, at least 10m either side of the watercourse and at least 10m from the edge of the offsite woodland. These landscape buffers would provide habitat corridors for a range of species.

Habitat creation proposals onsite have been assessed using the Statutory Biodiversity Metric. The outline proposals would deliver a net gain of +31.12 Habitat Units (+37.35%), +17.61 Hedgerow Units (+22.59%) and +0.71 Watercourse Units (8.68%). Additional measures undertaken to avoid, mitigate and compensate for adverse effects and provide ecological enhancement would include the following:

- Construction-management measures would be undertaken to prevent pollution (e.g., through dust, surface-water runoff).

- Retained hedgerows, mature trees and offsite woodland would be protected from disturbance during construction through the use of temporary barriers (e.g., Heras fencing) in accordance with BS5837:2012.
- Works would be implemented under an approved (Natural England) great crested newt District Level Licensing scheme.
- The reptile mitigation strategy would include habitat manipulation and hand searches, to be undertaken prior to the start of construction. Measures would be undertaken to enhance the Site for reptiles, including provision of ten reptile hibernacula within open space.
- Prior to construction, a re-survey of the Site would be undertaken to determine distribution and activity at setts in the vicinity of the construction area. Closure of setts would be undertaken under a Natural England Badger Development Licence, if required. Retained setts would be buffered from the development by a 20m Exclusion Zone.
- Hedgerow, scrub and tree removal would be undertaken outside of bird-nesting season or preceded by a search for nesting birds.
- No lighting would be left on during the night during the construction period. Any security lighting would be positioned at low-height and motion activated on short-timers. The lighting design for the proposed development would ensure that lighting impacts to bats were minimised, including maintenance of habitat corridors around the Site.
- Bat and bird habitat (e.g., bat tubes/bricks, swift boxes) would be incorporated into new buildings and also on trees to provide roosting/nesting habitat. Insect/Bee Bricks are also proposed.
- A destructive search for hedgehogs would be undertaken prior to the start of construction. Hedgehog passes would be created within new garden fences to allow hedgehogs to move around and through the Site post development works.

A Construction and Ecological Management Plan (CECoMP) would be produced to detail measures to ensure habitat and species protection during construction. A Landscape and Ecological Management Plan (LEMP) would be produced to detail how retained and proposed habitats would be managed in the long-term.

Residual effects

The proposed development would have no residual adverse effects on any designated sites of nature conservation importance, and no effects on the integrity of any European designated sites are predicted.

There would be a long-term positive effect on habitats and Biodiversity Net Gain (BNG) could be achieved. Long-term adverse residual effects on badger, otter, bats and brown hare would occur through loss of foraging habitat; these effects would be at the Sub-Parish Level and are not significant. All other species-level effects would be neutral or positive in the long-term. No significant cumulative effects with other plans or projects are predicted.

Conclusions

The proposed development could be undertaken in accordance with legislation relating to the protection of designated sites, habitats and species. The proposed development would avoid significant ecological harm and could deliver a minimum of 10% BNG (potentially with some offsite provision required for watercourses and woodland) in accordance with relevant legislation and national and local biodiversity planning policies. A Biodiversity Statement is included in this EclA.

1 Introduction, background and approach

1.1 Introduction

1.1.1 EAD Ecology was commissioned by Gleeson Land to undertake an Ecological Impact Assessment (EclA) of a proposed residential development at Forest Farm, Chippenham (approximate OS Grid Ref: ST939716; refer to Figures 1 and 2), hereafter referred to as 'the Site'. This report documents the EclA, which was undertaken in accordance with BS42020:2013 and following Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines (2018). It includes the following sections:

- Description of the existing ecological baseline;
- Identification of the potential impacts of the proposals during and post-construction;
- Identification of proposed avoidance, mitigation and compensation measures for adverse impacts, and further enhancement measures;
- Summary of residual ecological effects, i.e., those occurring after mitigation;
- Consideration of cumulative effects; and
- Conclusions, including assessment of compliance with wildlife legislation / planning policy and a Biodiversity Statement with regard to Biodiversity Net Gain (BNG).

1.2 Legislation and planning policy

Wildlife legislation

1.2.1 The following wildlife legislation is relevant to the proposed development:

- The Environment Act 2021;
- Conservation of Habitats and Species Regulations 2017 (as amended);
- Wildlife and Countryside Act 1981 (as amended);
- Countryside and Rights of Way Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006 (as amended);
- Protection of Badgers Act 1992; and
- Hedgerow Regulations 1997 (as amended).

1.2.2 A summary of the relevant wildlife / protected species legislation is provided in Appendix 1.

National planning policy

1.2.3 The National Planning Policy Framework (NPPF; 2024) includes the Government's policy on the protection of biodiversity through the planning system. A summary of the relevant paragraphs of the NPPF is provided in Appendix 2.

Local planning policy

1.2.4 Current local planning policy comprises the Wiltshire Core Strategy (WCS; adopted January 2015) and the Chippenham Neighbourhood Plan 2023-2038, together with 'saved' policies of the North Wiltshire Local Plan. The following policies are considered relevant to the ecological assessment of the proposed development:

- Wiltshire Core Strategy Policies 50 (Biodiversity and Geodiversity) and 53 (Wiltshire's Canals).
- Chippenham Neighbourhood Plan Policies GI1 (Protecting and Enhancing Biodiversity) and GI5 (Trees, Woodlands and Hedgerows).
- North Wiltshire Local Plan 'Saved' Policy NE14 (Trees and the control of new development).

- 1.2.5 The following additional documents are considered to be relevant to the ecological assessment of the proposed development:
- Bats Special Areas of Conservation (SAC) Planning Guidance for Wiltshire.
 - Wiltshire Biodiversity Action Plan (BAP).
- 1.2.6 Wiltshire Council submitted a draft Local Plan for examination in November 2024. Following examination hearings in 2025, the Inspectors raised fundamental concerns regarding the soundness of the plan, including in relation to insufficient housing allocations, uncertainty over the deliverability of the plan's major housing proposals, and the risk that the plan would become out of date shortly after adoption.
- 1.2.7 Following further discussions, the draft Local Plan was withdrawn at Full Council on 19 May 2026.
- 1.2.8 Notwithstanding its withdrawal, the draft plan previously identified the Application Site as forming part of the South Chippenham allocation (Policy 7), which proposed a mixed-use development comprising approximately 2,520 dwellings, approximately 15ha of employment land, a district and local centre, education provision, and a transport corridor linking the A4 and the A350 (the Southern Distributor Road).
- 1.2.9 The withdrawal of the draft Local Plan was not attributable to any specific concerns relating to Policy 7 but instead reflected wider issues concerning the overall soundness and deliverability of the plan as a whole. The initial feasibility and technical work undertaken by the Council and the landowners confirm both the need, availability, and general acceptability of development at Forest Farm and the wider site for a mixed-use development.
- 1.2.10 This outline planning application has been prepared to bring forward development on this part of the site, previously identified and assessed by Wiltshire Council in the withdrawn Local Plan Review as suitable for housing-led development.
- 1.2.11 Land has been safeguarded within the Application Site to accommodate a section of the potential Southern Distributor Road. The safeguarded corridor has been retained to ensure that the proposed development would not prejudice its future provision. All relevant local biodiversity planning-policy text is contained in Appendix 3.

1.3 Approach

Ecological baseline

- 1.3.1 The ecological baseline was determined through desk study and Site survey.

Desk study

- 1.3.2 Biodiversity information was requested from a study area of 2km radius around the Site boundary (extended to 4km for bats) from Wiltshire & Swindon Biological Records Centre in April 2024. Information requested included the location and details of the following:
- Designated sites of nature conservation importance (statutory and non-statutory; extended to 10km for European statutory designated sites and 5km for other statutory sites using the Defra MAGIC website); and
 - Previous records of protected and/or notable species, including Priority Species (Species of Principal Importance for Conservation in England listed in accordance with Section 41 of the NERC Act 2006) and Wiltshire BAP Priority Species.

- 1.3.3 Only previous records of protected and/or notable species that were 20 years old or less were used to determine the Site baseline.
- 1.3.4 Information was also obtained from the following websites (data obtained in October 2024):
- <https://magic.defra.gov.uk/MagicMap.aspx> – Information on protected sites;
 - <http://jncc.defra.gov.uk> – information on protected sites, Priority Habitats and Species; and
 - <https://www.gov.uk/government/organisations/natural-england> – information on protected sites and standing advice.

Site survey

- 1.3.5 An Extended Phase 1 Habitat survey of the Site (and a wider survey area to include the central farm complex of Forest Farm located outside of the application boundary; together referred to as the 'Survey Area') was initially undertaken in February 2012, and updated in June 2014, October 2021, April 2024 and July 2025. The survey followed guidelines published by JNCC (2010) and Institute of Environmental Assessment (1995) and identified the main habitat types within the Survey Area and the presence / potential presence of protected and notable species. The results of the survey were detailed on a Phase 1 Habitat plan, with target notes used to identify specific features of ecological interest; refer to Figure 3. A botanical species list was recorded, although no attempt was made to record every plant species within the Survey Area; refer to Appendix 4.
- 1.3.6 The Extended Phase 1 Habitat survey identified the potential for protected and notable habitats and species within the Survey Area. Further (Phase 2) surveys were subsequently undertaken in 2022 and 2024 to determine if such habitats or species were present. A summary of these surveys is provided in Table 1.1 below; full details of methodologies and results are contained in Appendices 5 - 16. All surveys were carried out following standard published methods.

Table 1.1: Summary of Phase 2 ecological surveys

Survey	Date	Details
Invasive plants	May 2022 & May 2024	Survey to identify the presence of any legally controlled invasive plants. Refer to Appendix 5.
Hedgerow	May 2022	In accordance with survey guidelines published by Defra (2007). Refer to Appendix 6.
Great crested newt	May 2022 & May 2024	eDNA surveys (sampled in accordance with Biggs <i>et al.</i> , 2014). Habitat Suitability Index (HSI) survey (Oldham <i>et al.</i> , 2000). Refer to Appendix 7.
Reptiles	April -June 2022	Undertaken according to standard methodology (Froglife, 1999). Refer to Appendix 8.
Breeding birds	April - June 2022	Undertaken according to a modified Common Bird Census methodology (Gilbert <i>et al.</i> , 1998). Refer to Appendix 9.
Hazel dormouse	April - October 2022	Undertaken following standard methodology (Bright <i>et al.</i> , 2006). Refer to Appendix 10.
Badger	April 2022 & April 2024	In accordance with Harris <i>et al.</i> (1989). Refer to Appendix 11.
Bat activity	April – October 2022	In accordance with Bat Conservation Trust (BCT) Guidelines (Collins, 2016). Refer to Appendix 12.
Bat roosts	July – September 2014 (buildings and	Preliminary roost assessment of all trees and buildings (within adjacent farm complex) in accordance with BCT Guidelines (Collins, 2016 and 2023). For impacted

Table 1.1: Summary of Phase 2 ecological surveys

Survey	Date	Details
	trees) July – September 2022 (buildings and trees) April – August 2024 (trees only)	(directly/indirectly) buildings and trees, dusk/dawn emergence/re-entry surveys were undertaken in accordance with BCT Guidelines (Collins, 2016). Additional aerial tree climbing surveys undertaken in 2024. Refer to Appendices 13 and 14.
Otter	April - October 2022 & April - June 2024	In accordance with survey guidelines (Chanin, 2003). Refer to Appendix 15.
Water vole	April - October 2022 & April - June 2024	In accordance with survey guidelines (Dean <i>et al.</i> , 2016). Refer to Appendix 15.
Habitat Condition Assessment	May 2024 & July 2025	Habitat condition assessment of all habitats onsite, following Statutory Metric guidance (Defra 2024a). Refer to Appendix 16.

Survey limitations

- 1.3.7 The Extended Phase 1 Habitat Survey of the Survey Area was updated in April 2024 and did not identify any significant habitat changes to the previous survey undertaken in October 2021; however, it was considered appropriate to update a number of the Phase 2 surveys listed in Table 1.1 to inform the emerging development proposals. As the habitats onsite had not changed significantly, the results of the hedgerow, reptile, breeding-bird, hazel dormouse and bat-activity surveys undertaken in 2022 were still considered valid; age of survey data is not considered to be a limitation and accords with BS42020:2013.
- 1.3.8 Access for building inspections and emergence survey was not possible in 2024, therefore surveys could not be updated. As the habitats onsite had not changed significantly, and externally the buildings did not appear to have changed significantly, it was considered appropriate to include the results of the 2014 and 2022 surveys to inform the emerging development proposals; refer to Appendix 13.
- 1.3.9 Part of the Site comprising the A4 road (London Road) and adjacent hedgerows and verges (refer to Figure 2) was not included within the ecological Survey Area for Phase 2 surveys (although was included within Habitat Condition Assessment surveys to inform the BNG assessment) as works in this area would largely be within the current highways footprint. This is not considered to compromise the adequacy of this assessment.
- 1.3.10 The survey boundary for the July 2025 habitat survey (and Habitat Condition Assessment) was extended to include the two pedestrian/cycle access routes incorporated within the northwest boundary of the Site; refer to Figure 3. The Survey Area for the Phase 2 surveys does not include these access routes, which were incorporated within the Site after the Phase 2 surveys had been completed. Based on the habitats present along these routes, the information obtained on the presence/distribution of protected/notable species from the Phase 2 surveys of the adjacent land, and the nature of the works proposed in these areas, this is not considered to be a significant limitation to the assessment.
- 1.3.11 Due to changes to the redline boundary Habitat Condition Assessment information was not collected for all of the woodland and grassland parcels along the two pedestrian/cycle access

routes during the July 2025 survey. Where survey information was not available for a parcel, information from a neighbouring parcel was used and supplemented with Priority Habitat data from the Magic website, where available. Given the small extent of the areas to which this applies and the typically uniform nature of habitats within the highways estate, this is not considered to be a significant limitation to the impact assessment. The Habitat Condition Assessment information would be updated for the Biodiversity Gain Plan.

Evaluation of ecological features

- 1.3.12 The importance of the identified ecological features was evaluated using criteria for habitats and species based on CIEEM guidelines (2018). Ecological importance was classified using an eight-level geographic scale from 'Sub-Parish' (low) to 'International' (high); refer to Appendix 17. Legal protection of species is considered in Section 4 (mitigation) and does not specifically form part of the valuation process.

Confirmation of 'important' ecological features

- 1.3.13 Features were identified that were considered 'important', in accordance with CIEEM guidelines (2018), and therefore subject to further detailed assessment. Features that were unlikely to be affected by the project, or were sufficiently widespread, unthreatened or resilient to potential project impacts, were not considered important in the context of the proposed development, and were not, therefore, subject to further assessment.

Identification of potential impacts

- 1.3.14 Potential impacts on the important ecological features were described for the construction and post-construction phases of the development.

Avoidance, mitigation, compensation and enhancement measures

- 1.3.15 The proposed development (refer to Figure 2) was informed by the ecological baseline, including the presence of habitats and presence/predicted presence of protected species. Therefore, the impact assessment was of a partially-mitigated scheme. Additional avoidance, mitigation, compensation and enhancement measures for the construction and post-construction phases of the development were identified; where appropriate, recommendations for how these measures could be secured (for example, through planning conditions/obligations or Natural England licensing) were also identified.

Residual effects

- 1.3.16 An assessment of the residual positive, adverse or neutral ecological effects was undertaken following CIEEM (2018) guidelines. The effect timescale was given as:
- Acute, immediate and discrete.
 - Short-term: 0-3 years.
 - Medium-term: 3-10 years.
 - Long-term: 10+ years.
- 1.3.17 Effects were described at a geographical scale (refer to Appendix 17); effects identified at Sub-Parish level and below were not considered 'Significant'. Effects identified at Parish level and above were considered 'Significant'.
- 1.3.18 The conclusion to the assessment confirms any significant residual effects, compliance with national planning policy (including the avoidance of 'significant harm' in accordance with Paragraph 180 of the NPPF, 2024), and compliance with relevant local planning policy.

1.3.19 To facilitate a consistent approach to the assessment of significance of residual effects of development of the Site within an Environmental Statement, a summary table is provided in Section 5 of residual effects predicted to remain after the application of mitigation measures. Within this summary table, the importance of the ecological receptors and magnitude of change have been categorised using an evaluation scale based on CIEEM guidelines (2018), but that is consistent with the approach set out in the Environmental Statement. The importance of ecological receptors has been transposed from CIEEM to EIA categories as follows:

- International (High).
- National / UK (High).
- Regional (Medium).
- County (Medium).
- District (Medium).
- Parish (Medium).
- Sub-Parish (Low).

Biodiversity Net Gain

1.3.20 A BNG Assessment was undertaken using the Defra Statutory Biodiversity Metric calculation tool (Defra, 2026) in order to demonstrate that the proposed development could deliver net gain. A Biodiversity Statement is provided in Section 5.4.

1.3.21 A Habitat Condition Assessment (HCA) survey was undertaken to inform the BNG assessment. This was undertaken by an experienced ecologist (FISC Level 5) on 13 May 2024 and updated on 16 July 2025. All habitats, hedgerows and watercourses were assessed in accordance with the Statutory Metric Condition Assessment Criteria (Defra, 2025a), however, refer to assumptions section of Appendix 16. All baseline habitats were mapped in accordance with the UKHab Classification System (V2.0; 2023) following methodology detailed in the UK Habitat Classification User Manual (Butcher *et al.*, 2020). The watercourse component of the metric was informed by a River Condition Assessment undertaken in accordance with the MoRPh survey methodology (Shuker *et al.*, 2017). The Illustrative Masterplan (Figure 2) and Illustrative Landscape Strategy plan (Figure 4) were referenced for the proposed (post-intervention) development scenario; refer to Appendix 16 for further details.

2 Ecological baseline

2.1 Designated sites of conservation importance

- 2.1.1 No statutory or non-statutory designated sites of nature conservation importance occur within or adjacent to the Site. However, a number of designated sites occur within the study area around the Site; refer to Paragraphs 2.1.2 - 2.1.5, Table 2.1 and Appendix 18.

European designated sites

- 2.1.2 One European-designated site occurs within 10km of the Site, which is Bath and Bradford on Avon Bats Special Area of Conservation (SAC). This has been designated primarily for its greater horseshoe bat and Bechstein's bat hibernation roosts; refer to Appendix 18. Bath and Bradford on Avon Bats SAC consists of four component Sites of Species Scientific Interest (SSSIs), of which one lies within 10km of the Site; Box Mine SSSI is located 9.4km to the southwest. The landscape around the SAC roosts is considered to be important in maintaining the favourable conservation status of the qualifying species, and the Bat SAC Planning Guidance for Wiltshire (Wiltshire Council, 2015) identifies 'Bat Consultation Zones', which comprise 'core roosts' and 'core areas' for the bat species associated with the SAC. The Site is not located within a 'Bat Consultation Zone' for the SAC.

Nationally-designated sites

- 2.1.3 Three statutory designated sites of nature conservation importance occur within 5km of the Site, comprising two SSSIs and one Local Nature Reserve (LNR); refer to Table 2.1 and Appendix 18. The nearest is Mortimore's Wood LNR, which is located 1.5km to the west and is designated for ancient semi-natural broadleaved woodland and river bank habitats.
- 2.1.4 Bencroft Hill Meadows SSSI and Spy Park SSSI occur approximately 2.2km to the north-east and 3.1km to the south respectively. The Site does not lie within a SSSI 'Impact Risk Zone' for residential development for these or any other SSSIs.

Non-statutory designated sites

- 2.1.5 There are 15 non-statutory designated sites of nature conservation importance within the study area; refer to Table 2.1 and Appendix 18. The closest is Stanley Abbey Farm Meadows Local Wildlife Site (LWS), which is located approximately 820m to the east of the Site at its nearest point.

Table 2.1: Designated sites within the study area

Site name	Designation	Reason for designation	Approximate distance and direction from Site
European designated sites within 10km			
Bath and Bradford on Avon Bats	SAC	Annex II species that are a primary reason for selection: - Greater horseshoe bat <i>Rhinolophus ferrumequinum</i>. - Bechstein's bat <i>Myotis bechsteinii</i>.	9.4km to the south-west (Box Mine SSSI)

Table 2.1: Designated sites within the study area

Site name	Designation	Reason for designation	Approximate distance and direction from Site
		Annex II species present as a qualifying feature, but not a primary reason for site selection: • Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	
Nationally-designated sites within 5km			
Mortimore's Wood	LNR	Ancient, semi-natural broadleaved woodland.	1.5km west
Bencroft Hill Meadows	SSSI	Unimproved pasture of very high botanical quality.	2.2km north-east
Spye Park	SSSI	Large expanses of alderwoods, oakwoods, parkland and dry acidic grassland.	3.1km south
Non-statutory designated sites within 2km			
Stanley Abbey Farm Meadows	LWS	Neutral grassland.	820m east
Middle Lodge Wood	LWS	A small semi-natural oak wood in a shallow valley basin.	920m south-west
Derry Woods	LWS	Two areas of ancient semi-natural broadleaved woodland on a greensand and clay ridge.	930m east
Nocketts Hill Copse	LWS	A small fragment of ancient wet Alder woodland.	940m south-east
Bristol Avon River	LWS	Large wildlife corridor with river and riparian habitats.	1.1km south
Baydons Meadow	LWS	Area of neutral grassland.	1.1km north-east
Tacklemore Wood, Wheeler's Wood, Hazel Copse	LWS	Ancient and semi-natural woodland.	1.2km south
Horse Copse and Pigsty Copse	LWS	Ancient woodland.	1.2km south-east
Derry Hill Farm Meadows	LWS	Seven fields comprising unimproved neutral grassland and wet flushes, with woodland.	1.2km south-east
Close Wood	LWS	Ancient semi-natural broadleaved woodland with substantial wet areas	1.3km east
Lackham Wood	LWS	Ancient woodland.	1.3km south-west

Table 2.1: Designated sites within the study area

Site name	Designation	Reason for designation	Approximate distance and direction from Site
Raspberry Copse and Badgers Brow	LWS	Species rich woodland with a variety of stand types.	1.5km south-east
Mortimor's Wood	LWS	Ancient, semi-natural broadleaved woodland.	1.5km west
Bencroft Hill Meadows	LWS	Two hay meadows with herb rich neutral grassland.	1.6km north-east
Ash Grove	LWS	A small greensand site with hay meadow, pond-sedge swamp, open water and woodland.	1.9km south

2.2 Habitats within the Site boundary

2.2.1 Habitat descriptions are provided below; refer also to Figure 3 for the Phase 1 Habitat Plan and the accompanying Target Notes [TN] and photographs. Plant species are referred to using their English names; Appendix 4 lists them including their scientific names; nomenclature following Stace (2010).

2.2.2 The Site was dominated by fields containing improved grassland. The fields were bordered by fences and hedgerows, which were largely species-rich. Many of the hedgerows had associated dry or wet ditches. Mature trees were scattered throughout the Site. A small stream occurred in the eastern and southern part of the Site.

2.2.3 Although not within the Site boundary, the complex of farm buildings and associated habitats associated with Forest Farm have been included within the Survey Area (refer to Paragraph 1.3.5) and are shown on the Phase 1 Habitat Plan (Figure 3). The farm complex comprised barns and farm buildings with hardstanding, a slurry / waste water pit, amenity grassland, a small orchard and stands of tall ruderal.

Amenity grassland

2.2.4 Two regularly-mown lawns were recorded adjoining residential properties within the farm complex at the centre of the Survey Area (but outside of the Site application boundary (refer to Paragraph 1.3.5)). These were species-poor with a short sward (TN9 and TN12).

2.2.5 Amenity grassland was also the main habitat recorded along the two proposed pedestrian/cycle link routes; refer to Figure 3.

Buildings

2.2.6 Several buildings were recorded within the farm complex (TN2) at the centre of the Survey Area (but outside of the Site application boundary; refer to Paragraph 1.3.5). The more modern barns comprised steel structures with corrugated panelling, with older buildings comprising block or rendered walls with tiled roofs. One single-storey residential property was also present to the northeast of the farm complex (TN9). 'Built Environment' is a Wiltshire BAP Habitat.

Ditches

- 2.2.7 Several wet and dry ditches were present within the Site; all were associated with hedgerows. The water levels within the ditches varied across the Site, with many dry for the majority of the year. Dry ditches contained very little aquatic vegetation, with only occasional fool's water-cress recorded. Wet ditches contained water up to 20cm depth during the winter months only, and were recorded to be regularly dry during the summer months. Aquatic vegetation within the wet ditches included willowherb species, fools water-cress and reed canary-grass.

Hardstanding

- 2.2.8 Hardstanding was present around the farm buildings at the centre of the Survey Area (but outside of the Site application boundary; refer to Paragraph 1.3.5), and also connected these buildings to London Road via a farm access track which ran north from the central farm complex.
- 2.2.9 Hardstanding was also recorded where the two proposed pedestrian/cycle link routes cross Pewsham Way and along the existing footpath link between Pewsham Way and Monks Way; refer to Figure 3.

Hedgerows

- 2.2.10 Hedgerows were present around field boundaries throughout the Site. The majority were species-rich and comprised blackthorn, field maple, hawthorn, grey willow, elm, elder, ash, hazel, dogwood, dog rose and spindle. Many hedgerows contained mature oak tree standards, and three veteran trees were recorded within hedgerows. Occasional species-poor hedgerows were also present, and included hawthorn, blackthorn, elder, oak, ash, field maple and elm.
- 2.2.11 Two of the 30 hedgerows within the Site, both located in the west of the Site, were assessed as 'Important' under the ecological criteria of the Hedgerow Regulations (1997); refer to Appendix 6. 'Hedgerow' is a UK Priority Habitat and 'Ancient and/or Species Rich Hedgerows' is a Wiltshire BAP Habitat

Improved grassland

- 2.2.12 Improved grassland was the dominant habitat across the Site and was managed for cattle pasture and silage cropping. The sward was generally short (<15cm) except in occasional locations adjacent to field margins. The grassland was species-poor and dominated by perennial rye-grass. Other species included white clover, dandelion, creeping buttercup, broadleaved dock, cock's-foot, common nettle, common bent and Yorkshire fog. 'Farmland Habitat' is a Wiltshire BAP Habitat.

Poor semi-improved grassland

- 2.2.13 Narrow strips of poor semi-improved grassland were present along the verges of London Road in the north of the Site. Species included false oat-grass, rough meadow-grass, cock's foot, Yorkshire fog, timothy, perennial rye-grass, creeping bent, common mouse-ear, broadleaved dock, common nettle, field bindweed and creeping buttercup.

Running water

- 2.2.14 A small, slow-flowing stream, approximately 1m wide and 20cm deep, bisected the Site, flowing from northeast to southwest, following the line of the adjacent hedgerows. After leaving the Site, the stream joins the River Avon approximately 2km downstream. Aquatic plant species present included occasional fools' water-cress, willowherb species and reed canary-grass. 'Rivers and

streams' are a UK Priority Habitat, and 'Rivers, Streams and Associated Habitats' are a Wiltshire BAP Habitat.

Scattered trees

- 2.2.15 Mature oaks occurred throughout the Site, most associated with hedgerows (TN 3, 4, 5, 6 and 7), although a line of mature trees was present along part of the eastern boundary (TN10).
- 2.2.16 A small orchard was also recorded within the farm complex at the centre of the Survey Area (but outside of the Site application boundary; TN 12). This contained fruit trees above a lawn of regularly-mown amenity grassland. 'Traditional Orchards' is a UK Priority Habitat and a Wiltshire BAP Habitat.

Semi-natural broadleaved woodland

- 2.2.17 The northern proposed pedestrian/cycle link route passes through two narrow bands of semi-natural broadleaved woodland, located to the south of Pewsham Way, and cuts through the edge of another narrow band of woodland to the north of Pewsham Way. These woodlands included ash, oak, hazel, hawthorn and field maple. 'Lowland Mixed Deciduous Woodland' is a UK Priority Habitat and 'Woodland' is a Wiltshire BAP Habitat.

Scrub

- 2.2.18 Scattered bramble scrub was recorded occasionally within the Site, generally associated with field boundaries and fence lines.

Standing water

- 2.2.19 An area of standing water with very poor water quality, used as a slurry pit / farm water storage, was present within the farm complex at the centre of the Survey Area (but outside of the Site application boundary; TN1). This waterbody was not considered to meet the UK Priority Habitat criteria for ponds or the Wiltshire BAP Habitat criteria for 'Standing open water' due to its artificial nature, use, water quality and lack of aquatic vegetation.

Tall ruderal

- 2.2.20 Small nettle-dominated stands of tall ruderal were recorded around farm complex at the centre of the Survey Area (but outside of the Site application boundary). Other species included creeping thistle, bramble, false oat-grass and cock's-foot.

2.3 Surrounding habitats

- 2.3.1 To the northwest, the Site was bordered by residential properties. Pewsham Way bordered the Site to the west, beyond which was an extensive area of residential estate. To the north, east and south of the Site was agricultural land, comprising predominantly modified grassland bounded by hedgerows. London Road bordered the northern boundary of the Site and a defunct section of the Wiltshire and Berkshire Canal, lined with broadleaved woodland and scattered trees, also ran adjacent to a portion of the eastern Site boundary (TN10). Semi-natural broadleaved woodland also partly bordered the Site to the north, southwest and south.

2.4 Protected and notable species

Plants

Desk study

- 2.4.1 Numerous notable plant species have been recorded within the 2km study area including:

- 16 Priority Species (annual knawel, basil thyme, chamomile, cornflowers, corn cleavers, dandelion, fly orchid, greater water parsnip, small-flowered catchfly, spreading hedge parsley, stinking goose foot, stinking hawksbeard, tower mustard, true fox sedge, tubular water-dropwort, white helleborine);
- Three legally protected species (English bluebell, stinking goose foot, stinking hawksbeard);
- 16 nationally Scarce species;
- Seven Nationally Rare species; and
- 62 Wiltshire County notable species.

Site survey

- 2.4.2 No notable plants were recorded within the Site and the presence of such species was considered unlikely, based on the habitats present.

Invasive plant species

Desk study

- 2.4.3 There were no previous records of legally-controlled invasive plant species from the study area.

Site survey

- 2.4.4 No legally-controlled invasive plant species were identified within the Site during surveys undertaken in 2022 and 2024.

Invertebrates

Desk study

- 2.4.5 A range of notable invertebrate species have been recorded from the 2km study area including:
- 45 Priority Species of butterfly and moth;
 - Jersey tiger moth (legally protected);
 - *Zophomyia temula* and *Atypophthalmus inustus* (both true fly species), bulrush veneer, Gromwell ermine, spindle knot-horn and red-tailed cuckoo bee (Nationally Notable); and
 - *Cladoneura hirtipennis*, *Macrocera maculata* and *Trichonta fragilis* (Nationally Scarce species of true fly).

Site survey

- 2.4.6 Trees, hedgerows, ditches and modified grassland within the Site provided potential habitat for a range of common invertebrate species. The presence of significant populations of protected and/or notable invertebrates was considered unlikely.

Amphibians

Desk study

- 2.4.7 There are numerous records of great crested newt (GCN) from the 2km study area, including several from within 100m of the Site boundary. GCN is a fully protected Priority Species and Wiltshire BAP Species. Common toad, a Priority Species and Wiltshire BAP species, has also been recorded within the study area.
- 2.4.8 A review of detailed OS mapping was undertaken to locate ponds and other potential waterbodies within 250m of the Site, that may provide suitable breeding habitat for GCN. Eight ponds/waterbodies (Ponds 1-8) were identified; refer to Appendix 7. The waterbody located within the farm complex (Figure 3; TN1) at the centre of the Survey Area (but outside of the Site

application boundary) was excluded from survey as its use as a slurry pit, and consequently extremely poor water quality, was considered to render it of negligible value to amphibians. Wet ditches within the Site were also considered to be unsuitable for amphibians as they were dry for the majority of the breeding season, with only shallow water present during the winter months.

Site survey

- 2.4.9 GCN eDNA sampling surveys of ponds within 250m of the Site (refer to Paragraph 2.4.8) undertaken in 2022 were all negative for the presence of GCN. Of the update eDNA surveys undertaken in 2024, seven were negative for the presence of GCN and one pond (Pond 1; located approximately 155m to the north of the Site) returned a positive result, indicating the presence of this species; refer to Appendix 7.
- 2.4.10 Grassland margins and hedgerows within the Site provided suitable terrestrial habitat for great crested newt and common amphibians such as common toad.

Reptiles

Desk study

- 2.4.11 The desk study identified records of grass snake, adder and slow-worm from the study area. All reptiles are legally protected Priority Species.

Site survey

- 2.4.12 The reptile surveys recorded a 'Low' population of grass snake within the Site (maximum count of two individuals); refer to Appendix 8. Suitable reptile habitat was restricted to field margins, with the majority of the grassland within the Site providing sub-optimal reptile habitat due to its short sward resulting from frequent mowing/grazing. Hedgerows may also provide hibernation habitat and movement corridors for reptiles.

Birds

Desk study

- 2.4.13 There are a number of previous bird records from within the 2km study area; refer to Table 2.2. All wild birds are legally protected and some receive additional protection against disturbance when nesting. Many are also Priority Species and/or 'Red' or 'Amber' Species of Conservation Concern (Stanbury *et al.*, 2021); refer to Appendix 1.

Table 2.2: Notable bird species recorded in study area

Species	Schedule 1 ¹	Priority Species	BoCC ²	Wiltshire BAP
Barn owl	✓			✓
Black redstart	✓		Amber	
Brambling	✓			
Crossbill	✓			
Cuckoo		✓	Red	
Curlew		✓	Red	✓
Fieldfare	✓		Red	
Grasshopper warbler		✓	Red	✓
Greenfinch	✓			
Greylag goose	✓		Amber	
Grey partridge		✓	Red	✓
Hawfinch		✓	Red	

Table 2.2: Notable bird species recorded in study area

Species	Schedule 1 ¹	Priority Species	BoCC ²	Wiltshire BAP
Hen harrier	✓		Red	✓
Herring gull	✓			
Hobby	✓			
House martin	✓			✓
House sparrow		✓	Red	
Kingfisher	✓			✓
Lapwing		✓	Red	✓
Lesser redpoll		✓		✓
Linnet			Red	✓
Marsh tit			Red	
Mediterranean gull	✓		Amber	
Merlin	✓		Red	
Mistle thrush			Red	
Pintail	✓		Amber	
Quail	✓		Amber	
Red kite	✓			
Redwing	✓		Amber	
Reed bunting		✓	Amber	✓
Song thrush			Amber	✓
Skylark		✓	Red	✓
Spotted flycatcher		✓	Red	✓
Starling			Red	✓
Swift			Red	✓
Whinchat			Red	✓
Woodcock			Red	
Yellowhammer		✓	Red	
Yellow wagtail			Red	

Conservation status: 1 Listed on Schedule I of the Wildlife and Countryside Act 1981 (as amended), 2 Listed on 'Birds of Conservation Concern (Stanbury *et al.*, 2021)' Red/Amber Lists

Site survey

2.4.14 The breeding bird surveys recorded a total of 49 bird species within the Site (refer to Appendix 9), of which 40 species were either 'confirmed', 'probably' or 'possibly' breeding on Site. These included:

- House sparrow, which was confirmed as breeding, skylark and yellowhammer, which probably bred, and starling, which possibly bred; these are Red-listed Priority Species.
- Bullfinch, which was confirmed breeding, and dunnock and song thrush, which probably bred; these are Amber-listed Priority Species.
- Greenfinch, which 'probably bred'; this is a Red-listed species.
- Rook, confirmed to be breeding, woodpigeon and wren, which probably bred, and kestrel, moorhen, sparrowhawk, whitethroat and stock dove, which possibly bred. These are Amber listed species.

2.4.15 Red kite was considered to have 'probably bred' within the offsite woodland located immediately adjacent to the southwestern Site boundary; this species is protected under Schedule 1 of the

Wildlife and Countryside Act 1981 (as amended). The habitats within the Site may form part of a red kite territory.

- 2.4.16 No barn owls were recorded during the breeding bird surveys. However, two barn owls were recorded emerging from Tree 26 (refer to Appendix 14; Figure A14.1) during bat surveys in July and September 2024. The presence of a barn owl nest and/or roost site within this tree is assumed. Habitats within the Site comprised improved grassland, managed for cattle grazing and silage cropping, with a short, homogenous sward, which falls within the '*Type 2 barn owl habitat category*' (Shawyer, 2011). Type 2 habitats are described as offering "sub-optimal habitat for field voles and are of intermediate and often transient value to barn owls". Barn owl is protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and is a Wiltshire BAP species.

Hazel dormouse

Desk study

- 2.4.17 There were no previous records of hazel dormouse from the study area. Hazel dormouse is a legally-protected Priority Species and a Wiltshire BAP Species.

Site survey

- 2.4.18 No evidence of dormouse was recorded during the hazel dormouse survey; refer to Appendix 10. This species is assumed absent from the Site.

Badger

Desk study

- 2.4.19 There are numerous records of badger from the study area. Badgers are legally protected.

Site survey

- 2.4.20 The badger survey recorded two active outlier badger setts within the Site (refer to Appendix 11 for locations):
- Outlier sett 1; located centrally within the Site, comprised one active entrance and one disused entrance.
 - Outlier sett 2; located in the northwest of the Site, comprised two active entrance holes.
- 2.4.21 One further disused single-entrance outlier sett was located on the Site boundary, to the west of the central farm building complex.
- 2.4.22 A further three active main badger setts and one annexe sett were also recorded immediately adjacent to, but outside of, the south-eastern and south-western Site boundaries (refer to Appendix 11 for locations):
- Main sett 1; located on the far side of the ditch along the south-eastern Site boundary, comprised at least 22 active entrance holes.
 - Main sett 2; located on the far side of the ditch along the south-eastern Site boundary, comprised at least 23 active entrance holes.
 - Annex sett 1; located approximately 20m north of Main sett 2 on the far side of the ditch along the south-eastern Site boundary, comprised five active entrance holes.
 - Main sett 3; located within woodland approximately 15m from the south-western Site boundary, comprised 13 active entrance holes and 11 disused holes.

- 2.4.23 Grassland and hedgerows within the Site provided suitable foraging habitat for badgers, and badger tracks, hairs, prints and latrines were recorded throughout the Site.

Bats

Desk study

- 2.4.24 There are records of brown long-eared, soprano pipistrelle, Natterer's, Daubenton's, whiskered and lesser horseshoe bat roosts within a 500m radius of the Site. However, the exact locations are withheld by Wiltshire & Swindon Biological Records Centre.

- 2.4.25 Bat records from within the 4km study area include:

- Brown long-eared, barbastelle, Bechstein's, noctule, soprano pipistrelle, greater horseshoe and lesser horseshoe bat (all legally protected Priority Species and Wiltshire BAP Species); and
- Daubenton's, Brandt's, Nathusius pipistrelle, Leisler's, serotine, whiskered, Natterer's and common pipistrelle bat (legally protected and Wiltshire BAP Species).

Site survey

Activity survey - static detector survey

- 2.4.26 At least ten species of bat were identified during the static detector surveys with a cumulative total of 56,517 registrations recorded across the eight static detector locations within the Site; refer to Appendix 12. Common pipistrelle accounted for the highest number of registrations within the Site (60.11%), followed by soprano pipistrelle (16.69%), *Myotis* bat (15.70%), 'noctule, serotine or Leisler's bat' (1.99%) and noctule (1.82%). Other species recorded but accounting for less than one percent of the registrations included barbastelle, greater horseshoe, lesser horseshoe, long-eared bat, serotine, *Nyctalus* bat, unidentified pipistrelle species and Nathusius' pipistrelle.
- 2.4.27 The two static detector locations in the west of the Site recorded the highest levels of bat activity, followed by the two detector locations in the south of the Site. Bat activity recorded at these four locations was dominated by three species; common pipistrelle, soprano pipistrelle and *Myotis* bat, which together comprised over 90% of the bat registrations recorded at these locations.
- 2.4.28 Light-averse bat species recorded within the Site included *Myotis*, long-eared, lesser horseshoe, greater horseshoe and barbastelle bats. Fewer light-averse bat species were recorded in the north of the Site, likely due to light-spill from street-lights and the lit sports complex located to the north of London Road.
- 2.4.29 Barbastelle bats were recorded at all static detector locations, with a total of 559 registrations recorded across the Site throughout the survey period; the highest levels of barbastelle activity were recorded in the east of the Site. Analysis of the barbastelle bat activity recorded suggests that the Site provides suitable foraging habitat but is not a core commuting/foraging location for this species; refer to Appendix 12.
- 2.4.30 Greater horseshoe bats (GHS) were recorded at five of the eight static detector locations, located in the northwest, south and east of the Site, with a total of 40 registrations recorded throughout the surveys. GHS foraging activity, as defined by Miller (2001), was not recorded within the Site, indicating that the Site is not a core foraging location for this species; refer to Appendix 12.

- 2.4.31 Lesser horseshoe bats (LHS) were recorded at all static detector locations, with the exception of the static detector located on the northern boundary of the Site, adjacent to London Road, which failed to record any LHS. A total of 168 LHS registrations were recorded across the Site, with the highest levels of activity recorded on the southern and northwestern boundaries. Analysis of the LHS activity within the Site suggests it is not a core commuting/foraging location for LHS bats, with recorded activity sporadic in nature, rather than consistent or regular over consecutive nights; refer to Appendix 12.

Activity surveys - transect surveys

- 2.4.32 At least seven species of bat were identified during the transect surveys with a cumulative total of 1694 registrations recorded across the seven transects from April – October 2022. Common pipistrelle accounted for the highest number of registrations recorded within the Site during transect surveys (62.57%), followed by soprano pipistrelle (18.36%), noctule (6.85%), *Nyctalus* bat (4.49%), *Myotis* bat (3.84%) and undetermined pipistrelle bat (2.54%). Other bat species that accounted for less than 1% of registrations included ‘noctule, serotine or Leisler’s bat’ (12 registrations), long-eared bat (six registrations), barbastelle (three registrations) and serotine (two registrations); refer to Appendix 12.
- 2.4.33 Observations made during the transect surveys and analysis of the relative densities of bat registrations identified that the areas of higher bat activity generally correlated with the central section of the Site, adjacent to the farm complex, and an area of hedgerow to the east of these buildings; refer to Appendix 12, Figure A12.1.
- 2.4.34 ‘Light-averse’ bat species were recorded across the Site during transect surveys, although in relatively low numbers; the highest levels of these species generally observed in the southern and western areas. *Myotis* bats were recorded in all areas of the Site, with higher activity recorded in the west and south-eastern portions of the Site. Long-eared bats were recorded in only the south-east of the Site. Two barbastelle registrations were recorded in the south of the Site and there was a single barbastelle registration within the west of the Site. No GHS were recorded during the transect surveys.
- 2.4.35 Although greater horseshoe bats and *Myotis* bat species with the potential to have been Bechstein’s bats were recorded in low numbers within the Site, recorded activity levels were only indicative of occasional commuting, indicating that that the Site is not of importance for greater horseshoe or Bechstein’s bats associated with Bath and Bradford on Avon Bats SAC.

Bat roost surveys - buildings

- 2.4.36 Bat roost surveys of the offsite buildings at Forest Farm in the centre of the Survey Area (but outside of the Site application boundary) were undertaken in 2014 and 2022; refer to Appendix 13. During the surveys undertaken in 2014, Buildings 8 and 9 (refer to Figure A13.1 for locations) were found to support transitional roosts for low numbers (max. count 3) of soprano pipistrelle. The surveys undertaken in 2024 did not record any evidence of roosting soprano pipistrelle bats but recorded a day roost for low numbers of common pipistrelle (max. count 2) in Building 8.

Bat roost surveys - trees

- 2.4.37 Bat roost surveys of trees within the Site were undertaken in 2022 and 2024; refer to Appendix 14. Two trees (Trees 26 and 35; refer to Figure A14.1 for locations) were found to support day roosts for low numbers (max. count 2) of common pipistrelle bats.

Otter*Desk study*

- 2.4.38 Otter, which is a legally-protected Priority Species and a Wiltshire BAP Species, has previously been recorded within the study area. The closest records are from the London Road, within 100m of the Site boundary.

Site survey

- 2.4.39 No evidence of otter or otter resting places was recorded along the watercourse within the Site during surveys (refer to Appendix 15). However, periodic use of the stream is assumed for foraging/commuting. The hedgerow habitats adjacent to the stream were considered sub-optimal for use by resting otter. The ditches within the Site were considered unlikely to be used by this species due to the absence of standing water for the majority of the year, and only low water levels during wetter months.

Water vole*Desk study*

- 2.4.40 Water vole, which is legally protected, a Priority Species and a Wiltshire BAP Species, has previously been recorded within the study area, with the nearest records from the River Avon, approximately 1.5km to the west.

Site survey

- 2.4.41 The ditches within the Site were considered to provide sub-optimal habitat for water vole due to the absence of standing water for the majority of the year and/or only low water levels during wetter months. The watercourse provided potentially suitable habitat for the species. However, no evidence of water vole activity was recorded during the survey; refer to Appendix 15. This species is therefore considered to be absent from the Site.

Beaver*Desk study*

- 2.4.42 There are three records of beaver from the study area; the nearest record was associated with the River Avon, 1.5km to the west of the Site boundary. Beaver is a legally protected species.

Site survey

- 2.4.43 No evidence of beaver was recorded along the watercourse within the Site during surveys undertaken for otter and water vole, and the ditches within the Site were considered unsuitable for beaver due to the absence of standing water for the majority of the year.

Other mammals*Desk study*

- 2.4.44 Brown hare, hedgehog and harvest mouse have all previously been recorded within the study area. These are all Priority Species; brown hare is also a Wiltshire BAP Species.

Site survey

- 2.4.45 Brown hare was recorded incidentally within the Site during surveys in 2022. There was suitable habitat for hedgehog within the Site, and the presence of this species is assumed. Habitats were sub-optimal for harvest mouse, and the presence of this species is considered unlikely.

2.5 *Evaluation and confirmation of important ecological features*

- 2.5.1 An evaluation of the ecological features within the study area is provided in Table 2.3 below. This also includes confirmation of 'important' ecological features in the context of the proposed development, i.e. those that have been included in, or excluded from, further assessment.

Table 2.3: Evaluation and confirmation of important ecological features

Ecological feature	Ecological importance	Included in detailed assessment?	Reason
<i>Designated sites of nature conservation importance</i>			
Bath and Bradford on Avon Bats SAC	International	No	Valuation reflects designation. Site lies 9.4km from the nearest constituent SSSI and outside of the associated Bat Consultation Zones for this SAC. The Habitat Regulations Assessment (LUC, 2023) undertaken of the now-withdrawn draft Local Plan screened out any likely significant effect occurring as a result of physical loss of 'functionally linked habitat' arising from Policy 7 (Land South of Chippenham and East of Showell Farm), which included the Site (refer to Paragraphs 1.2.6 - 1.2.10). Whilst this allocation has since been withdrawn, the conclusions of the assessment are considered to remain applicable to the Site. Consequently, no mechanisms or pathways are identified likely to affect this site.
Mortimore's Wood LNR	District	No	Value reflects the designation level. No mechanisms or pathways identified likely to affect this site.
Bencroft Hill Meadows SSSI	National	No	Valuation reflects designation. No mechanisms or pathways identified likely to affect these sites due to its distance from Site and lack of public access.
Kellaways – West Tytherton, River Avon SSSI	National	No	Designated for geological interest. Valuation reflects the designation level. No mechanisms or pathways identified likely to affect this site.
Spye Park SSSI	National	No	Value reflects the designation level. No mechanisms or pathways identified likely to affect this site.
Stanley Abbey Farm Meadows LWS	Parish to County	Yes	Value reflects the designation level. Potentially impacted by the proposed development.
Bristol Avon River LWS	Parish to County	Yes	Valuation reflects the designation level. Site lies within the catchment of, and is hydrologically linked to, the River Avon.
Other non-statutory sites within 2km of the Site	Parish to County	No	Valuation reflects designation. No mechanisms or pathways identified likely to affect these sites due to their distance from Site and/or lack of public access.
<i>Habitats within the Site</i>			
Ditches	Sub-Parish	Yes	Common and widespread habitat of low ecological importance. Potentially impacted by the development.
Hedgerows	Parish	Yes	Hedgerows contain a variety of species and act as ecological corridors. All hedgerows are Priority Habitats; species-rich hedges are a Wiltshire BAP habitat.

Table 2.3: Evaluation and confirmation of important ecological features

Ecological feature	Ecological importance	Included in detailed assessment?	Reason
			Three hedgerows contained veteran trees – an irreplaceable habitat. Sections likely to be directly impacted by the development.
Amenity grassland, tall ruderal and hardstanding (within proposed pedestrian/cycle link areas)	Sub-Parish	No	Common and widespread habitats of limited biodiversity value.
Improved grassland	Sub-Parish to Parish	Yes	Common and widespread habitat of low ecological importance. 'Farmland Habitat' is a Wiltshire BAP Habitat. Likely to be directly impacted by development.
Poor semi-improved grassland	Sub-Parish to Parish	Yes	Common and widespread habitat of limited ecological value located along the verge of London Road. Likely to be directly impacted by development.
Running water	Parish to District	Yes	'Rivers and streams' are a Priority Habitat. and 'Rivers, Streams and Associated Habitats' are a Wiltshire BAP Habitat. Watercourse likely to support a range of species, including otter and will act as a wildlife corridor.
Scrub	Sub-Parish	Yes	Common and widespread habitat although suitable for nesting birds. Likely to be directly impacted by development.
Scattered trees	Sub-Parish to Parish	Yes	Mature trees provided habitat for a range of species including invertebrates and nesting birds. Potentially impacted by development.
Semi-natural broadleaved woodland	Parish	Yes	'Lowland Mixed Deciduous Woodland' is a UK Priority Habitat and 'Woodland' is a Wiltshire BAP Habitat. Woodland provided habitat for a range of species including invertebrates and nesting birds. Potentially impacted by development.
Adjacent habitats			
Amenity grassland and tall ruderal (present within farm complex)	Sub-Parish	No	Common and widespread habitats of limited biodiversity value.
Buildings and hardstanding (present within farm complex within Survey Boundary but outside of Site boundary)	Sub-Parish	No	Artificial habitats of limited biodiversity value. 'Built Environment' is a Wiltshire BAP Habitat. Buildings would not be impacted by development.

Table 2.3: Evaluation and confirmation of important ecological features

Ecological feature	Ecological importance	Included in detailed assessment?	Reason
Grassland, hedgerows, woodland, watercourse and trees (including orchard present within farm complex within Survey Boundary but outside of Site boundary)	Parish	Yes	Form part of the wider ecological network and include the Priority Habitats: lowland mixed deciduous woodland, hedgerows, 'Rivers and streams' and 'Traditional Orchards'. Potentially impacted by development.
Urban (residential and roads)	Sub-Parish	No	Artificial habitats of low ecological importance. Unlikely to be impacted by development.
<i>Protected and notable species</i>			
Plants	Sub-Parish	No	No notable or invasive plant species have been recorded or considered likely to occur within the Site; therefore, impacts are unlikely.
Invertebrates	Sub-Parish	Yes	No notable invertebrate species were recorded and the presence of significant populations of such species is considered unlikely. Common invertebrates potentially impacted by the proposed development.
Amphibians	Parish	Yes	Presence of great crested newt confirmed within an offsite pond within 250m of the Site boundary. Potential for great crested newts and common amphibians such as common toad to be impacted by the proposed development.
Reptiles	Sub-Parish	Yes	A 'Low' population of grass snake recorded within the Site. All reptiles are legally protected and Priority Species. Potentially impacted by development.
Birds	Parish	Yes	Suitable foraging and nesting habitat for a range of bird species, including declining species of conservation concern and Priority Species such as red kite, barn owl, house sparrow, bullfinch, dunnoek, song thrush and greenfinch, although extent of suitable habitat limited. Potentially impacted by the proposed development.
Hazel dormouse	Negligible	No	No evidence of hazel dormouse was recorded during surveys. This species is therefore considered to be absent from the Site.
Badger	Sub-Parish	Yes	Three outlier setts were recorded within or on the boundary of the Site. A further three active main badger setts and one annexe sett were also recorded immediately adjacent to, but outside of, the Site boundary. Habitats were suitable for foraging badgers. Badger is a legally protected species. Potentially impacted by development.

Table 2.3: Evaluation and confirmation of important ecological features

Ecological feature	Ecological importance	Included in detailed assessment?	Reason
Bats	Parish	Yes	At least ten bat species were recorded commuting/foraging, although activity was dominated by common pipistrelle. Light-averse bat species recorded within the Site included <i>Myotis</i> bat, long-eared bat, lesser horseshoe bat, greater horseshoe bat and barbastelle. Commuting/foraging bats potentially impacted by the development. Confirmed transitional roost for low numbers of soprano pipistrelle and day roost for low numbers of common pipistrelle bats recorded within the offsite buildings at Forest Farm which could potentially be indirectly impacted by the development. Two trees (Tree 26 and Tree 35) confirmed as day roosts for low numbers (2) of pipistrelle bats; these would be retained but potentially indirectly impacted by the development.
Otter	Parish	Yes	Watercourse provided a movement corridor and habitat for foraging otters, although no evidence of this species was recorded within the Site. Otter is a legally protected Priority Species and Wiltshire BAP Species. Potentially impacted by the development.
Water vole	Negligible	No	No evidence of water vole activity was recorded during surveys; this species is therefore considered to be absent from Site.
Beaver	Negligible	No	No evidence of beaver recorded during surveys; this species is therefore considered to be absent from Site.
Other mammals	Sub-Parish	Yes	The Site may be occasionally used by hedgehog and brown hare. Extensive alternative habitat for these species occurred in the immediate vicinity and the Site was considered unlikely to be of particular importance for them. Hedgehog and brown hare are Priority Species; brown hare is also a Wiltshire BAP Species.

3 Assessment of ecological effects

3.1 *The proposed development*

Development description

- 3.1.1 The proposed development comprises an Outline planning application with all matters reserved except access from the A4/London Road for up to 600 dwellings, land for a local centre, open space, landscape and provision of associated infrastructure; a strip of land located in the east of the Site has also been safeguarded for a potential link road; refer to Figures 2 and 4.

Ecological design and avoidance measures

- 3.1.2 The proposed development incorporates an integrated landscape and ecological design, including the creation of new wildlife habitats within the Site; refer to Figures 4 and 5. The indicative design includes the following features:
- New habitat creation to include an extensive area of Public Open Space (POS) in the east and south of the Site comprising wildflower grassland with scattered broadleaved trees, native woodland, scrub and hedgerow planting, and permanently wet 'wildlife ponds' with native marginal planting. Further habitat creation throughout the developed area and 'habitat corridors' to include native scrub, hedgerow and tree planting, wildflower grassland, SuDs features and swales.
 - Minimised hedgerow loss; retained hedgerows to be buffered from new development though the creation of landscape buffers of at least 5m of either side, and enhanced where possible through infill planting, maintaining functional 'habitat corridors' around the Site.
 - Planting of species-rich native hedgerows with trees along currently undefined sections of the northern Site boundary and adjacent to larger roads throughout the Site to strengthen the existing habitat network.
 - Provision of a landscape buffer of at least 10m width either side of the watercourse (with the exception of the two culverted road crossing locations), including enhancement of the riparian corridor through wildflower grassland and scattered native tree and scrub planting.
 - Provision of a landscape buffer of at least 10m width between the broadleaved woodland adjacent to the southwestern Site boundary and the development footprint, to include native scrub enhancement planting along the woodland edge.
 - Retention of a bat habitat corridor linking the offsite buildings at Forest Farm to the new habitats within the eastern and southern POS area and wider offsite habitats to the east and south.
- 3.1.3 A Construction and Ecological Management Plan (CECoMP) would be produced to detail measures to ensure habitat and species protection during construction. A Landscape and Ecological Management Plan (LEMP) would be produced to detail how retained and proposed habitats will be managed in the long-term. Both of these documents would be agreed with Wiltshire Council prior to the start of construction; refer to Section 4.4.

3.2 *Unmitigated effects during construction*

Designated sites of nature conservation importance

Bristol Avon River LWS

- 3.2.1 Without appropriate mitigation, there is a potential risk that the Bristol River Avon LWS could be affected by pollutants leaving the Site within run-off entering the onsite watercourse, which is

hydrologically connected to the River Avon and feeds into the LWS approximately 2km downstream. This could occur, for example, as a result of surface runoff contaminated with silt, hydrocarbons or other construction materials, or from an accidental fuel or concrete spill. Although the risk of such an impact is considered very low, should such an event occur this would be an adverse, medium-term effect significant at Parish level. Best Practice measures are proposed to ensure that this risk would be avoided/mitigated; refer to Paragraph 4.1.4.

Stanley Abbey Farm Meadows LWS

- 3.2.2 Due to the distance of the Site from Stanley Abbey Farm Meadows LWS (820m to the east), there are unlikely to be any impacts to this site during the construction phase.

Habitats on the Site

- 3.2.3 Based on the land use parameter plan (refer to Figure 2), Site clearance (including for development and green infrastructure) would result in the removal of the following habitats (all measurements are approximate):

- Improved grassland (approximately 39.03ha)
- Poor semi-improved grassland (approximately 0.19ha)
- Scrub (approximately 0.04ha)
- Broadleaved woodland (approximately 0.10ha)
- Hedgerow (approximately 360 linear metres)
- Ditch associated with hedgerows (approximately 40 linear metres)
- Eight mature trees (veteran trees are all retained).

- 3.2.4 The loss of the above habitats would be an adverse, medium-term effect at Sub-Parish level (i.e. not significant); this loss would be mitigated onsite in the medium to long-term through the implementation of the proposed landscape strategy; refer to Figure 4 and Paragraph 3.1.2.

- 3.2.5 Construction could also result in impacts to the retained trees, woodland, watercourse, ditches and hedgerows within the Site, for example through vehicular damage to Tree Root Protection Areas (RPAs) and storage of materials / compounds damaging habitats. Such activities could also lead to the generation of the following pollutants:

- Dust: this could have an adverse effect on plants through interference with photosynthesis, respiration and transpiration;
- Sediment and pollutants in surface-water run-off: this could have an adverse effect on the water quality of the watercourse and ditches.

- 3.2.6 Without mitigation, this would be an adverse, long-term effect at Parish level. Avoidance and mitigation are proposed to minimise the likelihood of such effects; refer to Paragraphs 4.1.3 - 4.1.4.

Habitats adjacent to the Site

- 3.2.7 Construction could result in impacts to the broadleaved woodland located immediately adjacent to the Site boundary, for example through vehicular damage to Tree RPAs and storage of materials / compounds. Dust and pollutants produced by construction activities could also potentially affect adjacent trees, woodland, hedgerows and watercourses. Without mitigation, this would be an adverse, short-term effect at Parish level; refer to Paragraphs 4.1.3 - 4.1.4 for proposed mitigation.

Protected and notable species*Invertebrates*

- 3.2.8 No impacts on notable invertebrate species are predicted. Site clearance would result in the loss of habitat for common and widespread invertebrates, although alternative habitat occurs in the vicinity. This would be an adverse, long-term effect at Sub-Parish level (i.e. not significant) but would be mitigated in the medium-term by the implementation of the landscape and drainage proposals.

Amphibians

- 3.2.9 There would be no loss of breeding habitat for amphibians, and the offsite pond found to support great crested newts, which is located 155m from the Site boundary, would not be directly impacted by the development.
- 3.2.10 Construction would result in the loss of grassland, scrub and hedgerow, which represent suitable terrestrial habitat for amphibians, including great crested newt. There is the potential that individual amphibians could be killed or injured during Site clearance. This would be an adverse, short-term effect at Parish level. Mitigation would be implemented to ensure legal compliance; refer to Paragraphs 4.1.7 - 4.1.8.
- 3.2.11 The retention and protection of habitat corridors through the Site would ensure that amphibians could continue to move around the Site and reach other suitable habitats (including ponds) in the vicinity.

Reptiles

- 3.2.12 Removal of grassland margins and hedgerow sections would lead to a reduction in foraging and breeding habitat for grass snake; habitat removal would be an adverse, long-term effect at Sub-Parish level; refer to Paragraph 4.2.6 for mitigation measures. Site clearance could also result in direct effects (e.g., killing/injury) to grass snake; this would be an adverse, acute effect at Sub-Parish level (i.e. not significant). Mitigation measures would be implemented to ensure legal compliance; refer to Paragraph 4.1.9.

Birds

- 3.2.13 Depending on the timing of Site clearance, there could be a direct effect on nesting birds, their eggs and young. This would be an adverse, acute effect at Sub-Parish level (i.e. not significant). Avoidance and mitigation measures are proposed to ensure legal compliance; refer to Paragraph 4.1.12. Habitat clearance, particularly hedgerow and tree removal, would result in the loss of nesting and foraging habitat used by a range of common/widespread species. This is considered to be an adverse, short-term effect at Sub-Parish level (i.e. not significant), but would be mitigated by new habitat creation in the medium-term onwards.
- 3.2.14 Construction activity has the potential to cause localised noise and visual disturbance which may cause displacement of nesting birds in the immediate vicinity, although some would be tolerant of disturbance or would become habituated. Given the temporary nature of the construction works, it is likely that any impact of disturbance on individual breeding pairs will not affect the local populations of affected species and is considered to be an adverse, short-term effect at Sub-Parish level (i.e. not significant).
- 3.2.15 The retention and protection of mature trees onsite, including the tree identified as a barn owl nest and/or roost site, will minimise potential effects to nesting/roosting barn owl. The protection

and buffering of the offsite woodland will also minimise potential impacts on red kite, which are known to nest adjacent to urban areas; refer to Paragraph 4.1.3 for protection measures for these habitats.

Badger

- 3.2.16 The four identified offsite main/annexe badger setts are located outside of the Site boundary and a minimum distance of 30m from the development footprint, and would therefore not be directly impacted by the development proposals.
- 3.2.17 The three onsite outlier badger setts lie within hedgerows, which would be retained within habitat corridors but lie within 20m of the proposed development footprint. There is therefore potential for disturbance or damage to these outlier setts to occur as a result of construction and/or landscaping works, inappropriate tracking of vehicles, or storage of plant and materials during construction. There would also be the risk that any badgers present within setts could be killed or injured during these works; this would be an adverse, acute effect at Sub-Parish level (i.e. not significant). Refer to Paragraph 4.1.15 - 4.1.16 for protection and mitigation for badger setts.
- 3.2.18 Open excavations within the construction area could lead to entrapment of badgers. Without mitigation, badgers may also be harmed by construction materials and chemicals. Mitigation measures would be implemented to protect the welfare of any affected animals; refer to Paragraph 4.1.17.
- 3.2.19 Site clearance would result in the loss of approximately 39ha of grassland habitat, which provides suitable foraging habitat. Whilst foraging habitat is available in the wider area, this habitat loss may cause badgers to seek to extend foraging activities beyond current territory boundaries, leading to conflict with adjacent badger groups. This would be an adverse, long-term effect at Sub-Parish level (i.e. not significant).

Bats: Roosting

- 3.2.20 There would be no direct loss of bat roosts as a result of the development proposals. The offsite buildings at Forest Farm, which were found to support common and soprano pipistrelle bat roosts, lie outside of the Site application boundary and would remain in agricultural use.
- 3.2.21 The two trees identified as supporting roosting pipistrelle bats would be retained within habitat corridors. As a more 'light-tolerant' species, the pipistrelle bats associated with these roosts are unlikely to be significantly disturbed by construction lighting, although mitigation measures are proposed to reduce construction lighting impacts on retained habitats and prevent direct light spill to the offsite buildings at Forest Farm; refer to Paragraph 4.1.19 for proposed mitigation. Additionally, construction lighting is only likely to be in use at times close to dusk/dawn during the winter months, when bats would not be expected to be using the transitional/day roosts recorded within these trees. Impacts to roosting bats are assessed as neutral.

Bats: Commuting and foraging

- 3.2.22 The majority of linear habitats which provide flight-lines and foraging habitat for bats would be retained and buffered from the development proposals within habitat corridors. These include the majority of hedgerows, the stream corridor, the offsite woodland and tree lines along the Site boundaries. However, Site clearance would result in the loss of approximately 360 linear metres of hedgerows across the Site, and two road crossings of the stream corridor, which would reduce the overall habitat connectivity through the Site and could affect commuting bats through the loss or fragmentation of these linear habitat features.

- 3.2.23 Loss of habitat, including hedgerows and grassland, would also decrease habitat for night-flying invertebrates, thereby reducing the overall value of the Site for foraging bats. Bat activity was concentrated around the centre of the Site, adjacent to the offsite agricultural buildings at Forest Farm, which lie outside of the Site application boundary and would remain in agricultural use. The effects of habitat removal would be adverse and long-term at Parish level.
- 3.2.24 Bats commuting and foraging across the Site could be adversely affected by construction lighting. This would have the greatest impact on the more light-sensitive species such as greater and lesser horseshoe, barbastelle, long-eared and *Myotis* bat species (Stone *et al.* 2015, Rowse *et al.* 2016). However, construction activities would be largely undertaken during the day when bats are not active, and lighting requirements are likely to occur largely during the winter months, when bats would be expected to be hibernating for the majority of the time and therefore either absent or present in very low numbers. Such effects are therefore considered to be minimal and unlikely to affect the local bat population, i.e., this would be an adverse, short-term effect at Sub-Parish level (not significant). Mitigation is proposed to further reduce the likelihood of such effects; refer to Paragraph 4.1.19.

Otter

- 3.2.25 Any pollution event during construction could have an adverse effect on water quality in the ditches/watercourse, which could affect prey availability for otter. This would be an adverse, short-term effect at Sub-Parish level i.e. not significant; refer to Paragraph 4.1.4 for relevant avoidance and mitigation.
- 3.2.26 Any otters using the watercourse within and adjacent to the Site could be disturbed by construction noise and lighting. However, as otters are predominantly nocturnal, the effects of disturbance would be largely avoided, as work would be undertaken during the day. This would be an adverse, short-term effect at Sub-Parish level i.e. not significant; mitigation is proposed to reduce the likelihood of such effects; refer to Paragraph 4.1.22.

Other mammals

- 3.2.27 Habitat clearance within the Site could reduce the area of foraging and resting habitat for brown hare and hedgehog. However, there is abundant alternative suitable habitat present in the wider area. There is also the potential for direct effects (i.e., killing or injury) on these species during Site clearance. Effects from habitat removal during construction would be adverse and long-term at the Sub-Parish level (i.e. not significant); refer to Paragraph 4.1.23 for proposed mitigation.

3.3 Unmitigated post-construction effects

Designated sites of nature conservation importance

Bristol Avon River LWS

- 3.3.1 The development could impact Bristol Avon River LWS through changes to the quality or quantity of surface or groundwater received by the hydrologically connected watercourse (refer to Paragraph 3.2.1). However, the drainage strategy for the development (including implementation of the SuDS design) would ensure that the pre-development greenfield characteristics were not exceeded i.e., there would be no significant increase in the quantity or decrease in the quality of water leaving the Site.

Stanley Abbey Farm Meadows LWS

- 3.3.2 The proximity of Stanley Abbey Farm Meadows LWS (approx. 820m from the Site boundary) and the presence of a network of connecting public footpaths could mean that the LWS receives

increased recreational pressure as result of the development. However, public access to the site, which is privately owned, is limited to a single public footpath located along the southeastern LWS boundary only. The provision of a significant area of attractive onsite POS would also be expected to minimise the numbers of new residents accessing the LWS via the footpath network. Significant adverse recreational impacts are therefore considered to be unlikely with respect to this site.

Other designated sites

- 3.3.3 No mechanisms or pathways have been identified that are likely to affect any other designated sites of nature conservation importance during the post-construction phase.

Habitats on the Site

- 3.3.4 The proposed approach to the landscape and ecological design for the development is summarised in Paragraph 3.1.2; refer also to Figure 4. Onsite habitat creation would include wildflower grassland, native broadleaved woodland and scrub, species-rich hedgerow with trees, wildlife ponds with associated marginal vegetation planting, and scattered native broadleaved tree planting throughout. Habitat loss would comprise predominantly improved grassland, a habitat of low ecological importance. Hedgerow and tree loss (of higher ecological importance) would be minimised and mitigated through extensive new hedgerow and tree planting.
- 3.3.5 The calculation in change in habitat value through the Statutory Biodiversity Metric confirms that the onsite habitat creation proposals, based on the Landscape Strategy Plan (Figure 4) could deliver a total of +114.43 Biodiversity Units, which would be a net gain of +31.12 Units (+37.35%). The Assessment also indicates that the proposed development could result in a net gain on Site of +17.16 Hedgerow Units (+22.59%) and +0.71 Watercourse Units (+8.68%). The net habitat changes would be a beneficial effect in the long-term at Sub-Parish level.
- 3.3.6 The proposals have been designed such that the majority of retained hedgerows lie within habitat-corridors and not directly adjacent to development parcels. Only the northern development parcel would be located directly adjacent to an existing hedgerow, although this hedgerow already forms the curtilage of an offsite residential garden. However, this retained hedgerow could be subject to further interference/removal by new homeowners whose gardens also abut the hedgerow, affecting its structure and functionality. Without mitigation, this would be an adverse, long-term effect at Sub-Parish level; proposed mitigation is identified in Paragraph 4.2.2.

Habitats adjacent to the Site

- 3.3.7 No significant effects on adjacent habitats are predicted.

Protected and notable species

Invertebrates

- 3.3.8 The proposed onsite habitats, including wildflower grassland, ponds, woodland, scrub and hedgerows, would provide suitable habitat for a range of invertebrates, including notable species. This is considered a beneficial, Sub-Parish effect in the long-term onwards.

Amphibians

- 3.3.9 New habitat creation, including wildflower meadow, permanently wet 'wildlife ponds' and wetland habitats, would provide terrestrial and aquatic habitat for amphibians, potentially including great crested newt. The proposed habitat corridors would also provide suitable movement corridors for amphibians and link habitat within the Site to habitat in the wider

landscape, including the offsite ponds to the north and southeast of the Site. Overall effects on amphibians are assessed as neutral in the medium-term onwards.

Reptiles

- 3.3.10 The habitat creation measures, including wildflower meadow, ponds and wetland habitats, would provide suitable foraging habitat for common reptiles including grass snake, which is known to occur within the Site. Overall effects on reptiles are assessed as neutral in the medium-term onwards.

Birds

- 3.3.11 Habitat creation proposals and provision of bird boxes would provide foraging and nesting habitat for birds including notable species such as barn owl, swift, house sparrow and dunnock.
- 3.3.12 Red kite is known to be relatively tolerant to anthropogenic disturbance and will nest adjacent to urban areas. Therefore, any disturbance caused by the development is unlikely to be significant to this species. The provision of a landscape buffer of at least 10m width between the development footprint and the offsite broadleaved woodland in which red kite were suspected to be breeding (refer to Paragraph 2.4.15), to include woodland-edge scrub planting, would further reduce any risk of potential disturbance.
- 3.3.13 It would be expected that a proportion of households within the new development will own cats and, therefore, local bird populations may be adversely affected by increased predation. However, it would also be expected that a proportion of households within the development area would provide supplementary feeding for birds, which is likely to help winter survival rates within the local population of some species and has been shown to improve breeding success in the following spring (Robb *et al.*, 2008). Overall, post-construction effects on birds are assessed as neutral in the medium-term onwards, as new habitats develop and installed bird boxes are utilised.

Badger

- 3.3.14 Built-form and hardstanding within the Site would be over 30m from the main and annexe badger setts immediately adjacent to the Site boundary. Whilst development could potentially subject any badgers to increased levels of anthropogenic disturbance, through traffic, lighting and noise, Natural England considers badgers to be relatively tolerant to moderate levels of noise and activity (Natural England, 2009), and so any disturbance caused by the development is unlikely to be significant.
- 3.3.15 The introduction of roads and vehicles within the Site could result in increased badger mortality from collisions with vehicles. New habitats within the Site would be suitable for foraging badgers and would reduce the effect of habitat loss during construction.
- 3.3.16 New public-realm habitats within the Site would be suitable for foraging badgers and movement corridors for badgers would be retained within the Site, however, overall effects on badger would be adverse and long-term at Sub-Parish level (i.e. not significant).

Bats: roosting

- 3.3.17 The trees supporting bat roosts would be retained within landscape buffers and the buildings at Forest Farm are located offsite at a distance from the development boundary. As a more 'light-tolerant' species, the pipistrelle bats associated with the tree roosts and the offsite buildings at Forest Farm are therefore unlikely to be significantly disturbed by street lighting and residential

lighting from properties within the development. However, the detailed design of public-realm lighting would seek to further minimise light spill to the roost features; refer to Paragraph 4.2.11.

- 3.3.18 Research indicates no negative impacts to soprano and common pipistrelle bats as a result of artificial lighting within flight corridors or foraging areas (ILP, 2023). Further, the retention of a landscape-buffered habitat corridor along the northern portion of the onsite watercourse (refer to Figure 5) would maintain a functional flight route between the offsite buildings at Forest Farm and adjacent tree roosts to the new foraging habitats within the eastern and southern POS area, as well as wider offsite foraging habitats to the east and south of the Site. Where this habitat corridor is crossed by a cycle path, lighting will be kept to the minimum standard required for safety. Overall effects on roosting bats are assessed as neutral. Should the safeguarded link road connection come forward at a later date, mitigation would need to be considered as part of that scheme to ensure landscape connectivity to these roosts is retained.

Bats: foraging and commuting

- 3.3.19 Street lighting and residential lighting from properties could have an adverse effect on bats, particularly more light-sensitive species. The impact of public-realm lighting on foraging and commuting bats is variable and depends upon the species concerned and the nature of their activity, as well as on the type and intensity of the lighting. Certain bat species are known to be relatively tolerant of artificial lighting e.g., common pipistrelle and noctule (Stone *et al.*, 2009; Stone, 2013).
- 3.3.20 The green infrastructure proposals include the creation of vegetated 'landscape buffers' of at least 5m either side of retained hedgerows, at least 10m either side of the watercourse (with the exception of the two culverted road crossing locations) and at least 10m from the edge of the offsite woodland. These landscape buffers would continue to provide suitable foraging habitat and flight routes for more light-tolerant bat species. Several of these species are also likely to continue to forage over the urban areas of the Site and are unlikely to be significantly impacted by public-realm lighting. The retention of a habitat corridor (refer to Figure 5) along the onsite watercourse (Paragraph 3.3.18) would maintain a functional flight route for the pipistrelle bat species which roost within the offsite buildings at Forest farm and would prevent the isolation of this roost.
- 3.3.21 Lighting directed to features used by light-sensitive species such as lesser horseshoe bat, greater horseshoe bat, long-eared bat, barbastelle and *Myotis* bats could potentially inhibit use of flightpaths with such species likely to avoid illuminated areas (Jones, 2000; Stone, 2013). Given the low recorded levels and patterns of occurrence of these species during the surveys, it is considered unlikely that the development would compromise the local conservation status of any bat species.
- 3.3.22 New habitat creation within the POS in the east and south of the Site would provide an extensive area of suitable foraging habitat for bats. Overall, effects on foraging and commuting bats would be adverse and long-term at Sub-Parish level (i.e. not significant).

Otter

- 3.3.23 The new development could potentially subject any otters using the watercourse within the Site to increased levels of anthropogenic disturbance, through lighting and noise. Traffic using the new road network within the Site could also result in increased road traffic collisions resulting in death or injury of otters, however given the assumed sporadic usage of the onsite watercourse by otter and the presence of existing high volumes of traffic on roads bordering the Site, this is unlikely to

be a significant increase. The watercourse would largely be buffered from built development by a minimum 10m landscape buffer. However, road crossings of the stream are proposed, which could restrict otter movement. Post-construction effects on otter would be adverse and long-term at Sub-Parish level (i.e. not significant). Refer to Paragraph 4.2.14 for mitigation measures for otter.

Other mammals

- 3.3.24 Hedgehogs are likely to use gardens and newly created habitats within the Site for foraging and shelter. However, without mitigation, close-board fences (e.g., for residential gardens) are likely to impede the movement of hedgehogs; refer to Paragraph 4.2.15 for mitigation. Traffic using the new road network within the Site could also result in increased road traffic collisions resulting in death or injury of hedgehogs, although this is unlikely to be significant given the presence of existing high volumes of traffic on roads bordering the Site. Effects on hedgehogs are considered to be neutral in the long-term.
- 3.3.25 It is unlikely that brown hare (if present) would utilise the Site following development. This effect would be long-term and adverse at Sub-Parish level (i.e. not significant).

4 Avoidance, mitigation, compensation and enhancement

4.1 *Avoidance, mitigation, compensation and enhancement during construction*

General

- 4.1.1 A Construction Ecological Management Plan (CECoMP) would be produced to detail measures to ensure habitat and species protection during the pre-construction and construction phases; refer to Paragraph 3.1.3. An Ecological Clerk of Works (ECW), as required by the CECoMP, would be appointed to provide advice and undertake ecological supervision, as required.

Designated sites of nature conservation importance

Bristol Avon River LWS

- 4.1.2 Pollution-prevention measures outlined in Paragraph 4.1.4 would ensure that there was no risk of potential construction effects on Bristol Avon River LWS. No avoidance or mitigation in respect of other designated sites of nature conservation importance is considered necessary during the construction phase.

Habitats within and adjacent to the Site

- 4.1.3 Construction would be undertaken in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction'. The retained hedgerows and trees and offsite woodland would be protected from potential damage during construction through the use of temporary barriers (e.g., Heras fencing). All contractors' compounds would be located away from retained hedgerows and trees and offsite woodland to minimise potential lighting and disturbance effects. Lighting would be avoided between March and October where possible, and no lighting would be left on during the night during the construction period. Any security lighting would be low-level and motion activated on short-timers.
- 4.1.4 Best practice measures would be implemented during construction to protect the watercourse within the Site. This would include adherence to national pollution-prevention guidance (<https://www.gov.uk/guidance/pollution-prevention-for-businesses>). Measures to control pollution, run-off and dust would be specified within a Construction Environmental Management Plan (CEMP); all habitat protection measures would be detailed in the CECoMP (refer to Paragraph 4.1.1), which would be appended to the CEMP.

Protected and notable species

Invertebrates

- 4.1.5 Retention of the majority of hedgerows and trees, buffering of the watercourse and offsite woodland, and the protection of these habitats (refer to Paragraphs 4.1.3 - 4.1.4) would ensure that the principal habitats for invertebrates would be retained and protected.
- 4.1.6 Insect/bee bricks would be incorporated into the walls of least 20% of new residential dwellings within the proposed residential development; this requirement would be set out in the CECoMP. Insect/bee bricks would be concentrated around areas of nectar and pollen-rich planting within the open space with further insect/bee bricks integrated into walls within private gardens or Public Open Space.

Amphibians

- 4.1.7 The proposed development has been registered with Natural England under the District Level Licensing Scheme for great crested newts and a 1st Stage Conservation Payment made. Prior to the commencement of development, the required Mitigation Licence would be obtained from Natural England, and the 2nd Stage Conservation Payment provided. The development would proceed in accordance with the Mitigation Licence; no specific onsite mitigation is likely to be required during construction.
- 4.1.8 Mitigation for common amphibians during Site clearance would be undertaken as part of reptile mitigation; refer to Paragraph 4.1.9.

Reptiles

- 4.1.9 Measures would be implemented during Site clearance to avoid accidental killing or injury to reptiles and amphibians. This would comprise habitat manipulation of the field margins proposed for removal to encourage any reptiles and amphibians to move into retained habitat outside of the working area. This would involve two-stage cutting of the field margins between April and mid-October. The vegetation would first be cut to 150mm and then left for a week to allow reptiles/amphibians to move into adjacent habitat. Vegetation would then be cut to ground level to discourage reptiles/amphibians from re-entering the work area.
- 4.1.10 Both cuts would be supervised by the ECW. The latter cut would be preceded by a destructive search by the ecologist, removing any sheltering materials such as logs and refuse. The ECW would also supervise removal of hedgerow sections. Any individual reptiles/amphibians found would be moved to suitable habitats outside of the works area. Once complete, the vegetation would be maintained at a low-level (<50mm) until the start of development works
- 4.1.11 Ten hibernacula would be created, located in suitable habitat within public open space including adjacent to new pond/wetland habitat, which would enhance the new habitats onsite for reptiles and amphibians until they became established. This would be specified in the CECoMP and LEMP.

Birds

- 4.1.12 Clearance of hedgerow sections would be undertaken between September and February inclusive (i.e., outside of the main bird breeding season) to ensure that there were no direct effects on nesting birds. If clearance was required during the nesting season, an ecologist would first check the affected habitats for active nests. If any were found, the nest(s) and immediate surroundings would be left undisturbed until the eggs had hatched and young had fledged, or the breeding attempt was otherwise concluded (i.e., nest abandoned/predated). The ECW may establish a buffer zone around the nest (e.g., 5m) to minimise the risk of accidental damage/destruction.
- 4.1.13 Schwegler Type 1A swift boxes (or similar approved) would be incorporated into new buildings within the Site, at a minimum ratio of one box per dwelling. These would be suitable for use by swift, which is a 'Red List' Species of Conservation Concern (Stanbury *et al.*, 2021) and can also be used by other declining urban species such as house sparrow. Boxes would be integrated into the walls of new buildings at a minimum height of 4m; the precise locations would be detailed in the CECoMP.
- 4.1.14 A further 30 tree mounted bird boxes, including small and large hole boxes, and a barn owl nest box would be installed on retained trees within the open space in the southeast of the Site, close to suitable foraging habitat; refer to Paragraph 4.2.9. Approximate locations of tree-mounted bird boxes would be detailed in the CECoMP; precise locations would be determined onsite by the ECW.

Badger

- 4.1.15 Update badger surveys would be undertaken prior to construction to confirm the status of setts within the Site. Where retention of setts is not feasible (given consideration of relevant technical constraints), a Natural England Badger Development Licence would be obtained prior to commencement of works, for any active setts likely to be damaged or disturbed during Site clearance / construction. All works would be undertaken in accordance with the Method Statement for the Licence. Requirements for a mitigation licence would be specified in the CEcoMP.
- 4.1.16 Exclusion Zones marked by post and rail fencing (or similar) would be set out at a 20m radius around all retained active badger setts prior to construction to avoid any accidental damage of these setts. The offsite main and annexe setts recorded to the southeast and southwest of the Site boundary would not be directly affected by construction activities and minimum 20m buffer zones would also be established around the Site boundaries adjacent to these setts.
- 4.1.17 General construction management measures to minimise impacts on badgers would be adhered to during construction to protect badger welfare. Excavations and piping (>100mm in diameter) would be fenced/capped overnight to deter badgers from entering; excavations that cannot be covered would have a means of escape for any animals that may fall in (e.g., sloping sides/ramps a maximum of 1:2 gradients). Fuel, oil and chemicals would be stored in secure sites within the construction compound, and no fires would be lit.

Bats

- 4.1.18 Although the two trees with confirmed bat roosts are proposed for retention, and no further trees identified as having potential to support bat roosts are proposed to be removed, should any of these trees require felling or pruning for safety or other reasons, further survey would be undertaken as necessary to establish roost status. If it was found that potential impacts to a roost could not be avoided, a Natural England Bat Mitigation Licence would be obtained and implemented.
- 4.1.19 During construction, all contractors' compounds would be located a minimum of 10m away from the watercourse, retained trees, hedgerows and the offsite woodland to minimise potential lighting and disturbance impacts on commuting/foraging bats. Construction lighting would also be designed to ensure lighting is directed away from the landscape buffer zones around retained habitats and from the offsite buildings at Forest farm. Between April and October inclusive, any construction lighting within the Site would be turned off prior to sunset; any security lighting would be positioned at low-height and motion-activated on short-timers only. A strategy for mitigating the effects of construction lighting is set out in the Lighting Impact Assessment (The Lighting Bee, 2025) and would be specified within the CEMP.
- 4.1.20 1FR Schwegler bat tubes (or similar approved) would be incorporated into new buildings within the Site, at a minimum ratio of one per two dwellings, to provide new roosting habitat for bats. Boxes would be integrated into the walls of new buildings at a minimum height of 4m, ideally under the eaves or a gable end. The locations of integral boxes would be detailed in the CEcoMP and relevant construction drawings.
- 4.1.21 A further thirty Schwegler 2F-DFP bat boxes (or similar approved) would be installed on retained trees within the open space in the south and east of the Site. Approximate locations of tree-mounted bat boxes would be detailed in the CEcoMP; precise locations would be determined onsite by the ECW.

Otter

- 4.1.22 A pre-construction check of the watercourse would be undertaken by the ECW prior to construction to re-confirm that no holts or resting sites occur in the vicinity of the works. Any contractors' compounds would be located away from the watercourse to minimise potential lighting and disturbance impacts and any construction lighting within the Site would be turned off prior to sunset. Any security lighting would be positioned at low-height and motion activated on short-timers. Best practice measures employed for badger (Paragraph 4.1.17) would also mitigate any impact on otter, should an individual enter the works area at night.

Other mammals

- 4.1.23 To ensure that hedgehogs were not killed or injured during construction, hedgerow clearance would be preceded by a search for sheltering hedgehogs by the ECW. Any sheltering hedgehogs would be relocated to retained hedgerow outside the development area.

4.2 Avoidance, mitigation, compensation and enhancement post-construction***Designated sites of nature conservation importance***

- 4.2.1 No measures in respect of designated sites are considered necessary post-construction.

Habitats on the Site

- 4.2.2 New and retained hedgerows forming residential garden boundaries would be protected by a 1.8m post and wire mesh fence. The wire mesh would allow vegetation to grow through whilst also protecting the integrity of the developing/retained hedgerow. Relevant properties would also be subject to a restrictive covenant within their title deeds; this would restrict the permitted management to ensure that the integrity of hedgerows would be maintained.
- 4.2.3 Post-construction management of new and retained habitats would be specified in the LEMP, which would detail the management of these habitats for the first ten years post-construction. It would be reviewed and renewed for the next ten-year period (and then on a rolling programme) in agreement with Wiltshire Council.

Habitats adjacent to the Site

- 4.2.4 No mitigation is considered necessary during the post-construction phase.

Protected and notable species*Invertebrates*

- 4.2.5 Habitats would be managed in accordance with the LEMP, which would include habitat management measures for the benefit of invertebrates. Insect/bee bricks incorporated into walls within the proposed residential development are designed to be maintenance-free and no management would be required.

Amphibians and reptiles

- 4.2.6 New landscape planting would provide suitable terrestrial habitat for amphibians and reptiles, with the ponds potentially providing suitable breeding habitat for amphibians. Ten hibernacula would be created within the Site, to provide additional habitat for amphibians/reptiles while new wildflower meadow grassland becomes established. These habitats and features would be managed in accordance with the LEMP, which would include management measures that would benefit amphibians and reptiles. This would include details of the timing and height of grassland management.

- 4.2.7 Suitable measures would be included in construction design to minimise the risk of great crested newt mortality (e.g. through entrapment in gulley pots) and to ensure that great crested newts could traverse new roads. These measures would include inset kerb stones (e.g., ACO Wildlife Kerb) around all gulley pots. Kerbs either side of the inset kerbs stones would also have a 45° batter, to facilitate exit of amphibians from the highway.

Birds

- 4.2.8 Measures to avoid impacts on nesting birds as a result of landscape management works would be included in the LEMP. Bird boxes on buildings are designed to be maintenance-free and no management of these would be required. Bird boxes on trees would be maintained and replaced as necessary; this would be specified in the LEMP.
- 4.2.9 A proportion of the wildflower grassland in the area of open space in the east of the Site would be managed to have a longer, tussocky sward, suitable for small rodents, which would provide foraging habitat for barn owl; this would be specified in the LEMP.

Badger

- 4.2.10 Details of the management of habitats adjacent to retained setts and the avoidance of associated disturbance actions would be set out in the LEMP. The lighting parameters set out in Paragraph 4.2.11 would avoid adverse effects on badger movement and foraging.

Bats

- 4.2.11 The detailed design of public-realm lighting would seek to minimise the adverse effects on bats in accordance with current research and guidance (ILP, 2023; Rowse *et al.*, 2016); refer to Lighting Impact Assessment (The Lighting Bee, 2026), which has been submitted separately with the Outline Planning Application. Lighting would be avoided as far as possible within public open space (where health and safety considerations permit) to maximise the value of the retained and new habitats for light-averse bat species. No artificial lighting is proposed within the landscape buffer zones or bat habitat corridor, with the exception of the cycle/foot paths. Where essential, lighting would be the minimum necessary to meet public safety requirements and designed to direct light to discrete areas appropriate for the task and prevent spill on to adjacent habitats. The lighting design would consider the following characteristics.
- Narrow Spectrum lights with no UV content, e.g., warm white LED (up to 3000K).
 - Variable lighting regimes (motion sensors or part night lighting) in areas close to watercourse and Project Site boundaries.
 - Directional downlights - illuminating below the horizontal plane ideally at least 20° below the horizontal.
 - Reducing the height of light units (whilst ensuring light does not spill above the horizontal plane).
 - Use of fore/rear shields to restrict light direction.
 - Avoidance of upward light (e.g., ground mounted floodlights up-lighting trees, buildings and vegetation).
- 4.2.12 Lighting proposals would be reviewed by a suitably qualified ecologist and would be subject to approval by Wiltshire Council, for example through an appropriate Planning Condition.
- 4.2.13 Bat boxes within buildings are designed to be maintenance-free and no management would be required. Bat boxes on trees would be maintained and replaced as necessary; this would be specified in the LEMP.

Otter

- 4.2.14 The lighting parameters set out in Paragraph 4.2.11 would avoid adverse effects on otter movement as a result of light spill. Where new road crossings of the watercourse are proposed, these crossings would include 300mm diameter pipes either side of the culvert to facilitate otter movement, details of which would be shown on detailed construction drawings.

Other mammals

- 4.2.15 Hedgehog passes would be created within new garden fences to allow hedgehogs to move around the Site post-development. Each gap would have a minimum dimension of 13cm x 13cm and would be cut out of a gravel board on the bottom of the fence, or a similar sized gap left at the end of a board. One hedgehog pass would be created in each boundary fence and specified in the hard landscape designs and CECoMP.

4.3 Ecological monitoring

- 4.3.1 An ECW would be appointed to assist in the delivery of avoidance and mitigation during the pre-construction / construction period. This would be set out in the CECoMP.
- 4.3.2 Post-construction monitoring of the retained, created, and enhanced habitats would be undertaken to ensure successful establishment and management; a monitoring protocol would be contained in the LEMP.

4.4 Mechanisms for mitigation delivery

- 4.4.1 Preparation and implementation of the proposed CEMP, CECoMP, LEMP and lighting strategy could be secured via a planning condition. These management documents would also detail responsibilities for the delivery of the construction and post-construction mitigation, monitoring and management measures. Biodiversity Net Gain would be secured by the mandatory condition, requiring submission of a Biodiversity Gain Plan.

5 Residual effects

5.1 *Summary of residual effects*

- 5.1.1 Table 5.1 below provides a summary of the ecological assessment and identifies the residual ecological effects arising from the proposed development.
- 5.1.2 Table 5.2 also provides an assessment of the degree of effects predicted to remain after the application of mitigation measures.

5.2 *Cumulative effects*

- 5.2.1 The following applications are considered in combination with the application site:

- Land South of Chippenham: up to 500 dwellings, land for a primary school, youth play provision (a neighbourhood equipped area of play and local equipped area of play) and natural play area, allotments and associated highways, landscape, drainage and infrastructure works, including provision of a road linking the A4 London Road and the A4 Pewsham Way (application not yet submitted; scoping reference PL/2025/06656).
- Land East of Showell Farm, Chippenham (application reference: PL/2026/03545): up to 400 dwellings, land for a local centre, accommodating commercial, business and service uses (use class E), drinking establishment and hot food takeaway (sui generis), and local community uses (use class F2), open space and landscaping to include natural green space, amenity green space, area of formal play, allotments and community orchard, sustainable drainage infrastructure and ground remodelling.
- Land at Rawlings Farm, Cocklebury Lane, Chippenham (application reference: 15/12351/OUT): up to 650 dwellings, 5 ha of employment-generating space, a two-form entry primary school and up to 10 ha of new public open space, including a country park.
- Land at Showell Farm, Patterdown Road, Chippenham (application reference: N/13/00308/OUT): 50,000 m² of B1(b) (research and development), B1(c) (light industrial), B2 (general industrial) with ancillary B1(a) (office), and B8 (storage and distribution) with ancillary B1(a) employment development (construction ongoing, opening of the first 19,305 m² due in 2026).
- Land at North Chippenham, Hill Corner Road, East of A350, Chippenham (application reference: N/12/00560/OUT): up to 750 dwellings, up to 12,710 m² of employment development (B1 / B2 / B8), a local centre (A1 (retail), D1 (non-residential institutions), D2 (assembly and leisure)), a primary school, woodland management facilities, a new link road and public open space (construction ongoing, primary school and employment floorspace remaining to be constructed as of April 2025).
- Rowden Park, Patterdown Road, Chippenham (application reference: 14/12118/OUT): mixed use urban extension comprising up to 1,000 dwellings, one-form entry primary school, up to 400 m² retail convenience store, four shops up to 400 m² (A1-A5 (retail, financial and professional services, restaurants and cafés, drinking establishments and hot food takeaways)), community uses up to 700 m² (D1 and D2), and public open space including a riverside park, formal and informal recreational facilities and allotments (construction ongoing, 797 dwellings and all other uses remaining to be constructed as of April 2025).
- Land at Hunters Moon, Chippenham (application reference: 16/12493/FUL): outline application for the demolition of existing buildings and structures and the development of up to 450 dwellings, up to 2.41 ha of employment (B1, B2 and B8) development and public open space and full application for 140 dwellings, 10 B1 employment units and public open

space (construction ongoing, 71 dwellings and employment floorspace remaining to be constructed as of April 2025).

- Langley Park, Chippenham (application reference: 16/03515/OUT): demolition of existing buildings and redevelopment for up to 400 dwellings, a 69-bed hotel with up to 199 m² café, discount foodstore of up to 1,741 m² and up to 13,656 m² of B1, B2 and B8 floorspace (construction ongoing, 329 dwellings and employment floorspace remaining to be constructed as of April 2025).
- Land at Showell Nurseries, Chippenham (application reference: 17/08554/OUT): approximately 120 dwellings and public open space.
- Land off the B4069 East of Barrow Farm, Langley Burrell, Chippenham (application reference: PL/2022/04681): up to 230 dwellings, a local centre comprising commercial business and service uses (use class E) with a gross internal area limit of 675 m², of which no more than 200 m² shall be used for retail (E(a)), drinking establishment and hot food takeaway (sui generis), and public open space.
- Land at Forest Gate, Pewsham, Chippenham (application reference: PL/2021/06112): development of a solar farm of up to 49.9 MW of generating capacity, comprising the installation of solar photovoltaic panels and associated infrastructure, including customer cabin, customer substation, DNO substation and equipment, inverter and transformer substations, spare part container, associated battery storage, access tracks, fencing and landscape planting.

5.2.2 There would be no likely significant effect on the integrity of any designated sites of nature conservation, either alone or in-combination, with other planned development.

5.2.3 Effects of the proposed development on the majority of ecological receptors would be neutral or positive in the long-term and would not, therefore, contribute to cumulative effects with other developments. Potential in-combination effects could occur on badger, brown hare, otter and foraging/commuting bats (the only receptors where adverse effects from the proposed development are identified). However, such effects, whilst long-term, will remain at the minor level and will not, therefore, be significant. There will not be any in-combination effects on habitats, plants, invertebrates, reptiles, amphibians or birds.

5.3 Conclusion

5.3.1 The proposed development would have no residual adverse effects on any designated sites of nature conservation importance alone, or in combination with any other proposed developments. There would be a long-term adverse effect on badger, brown hare, otter and foraging/commuting bats at Sub-Parish level; this would not be significant. On the basis of the implementation of all avoidance, mitigation, compensation and enhancement measures identified in this report, all other long-term effects on habitats and species would be neutral or positive.

5.3.2 The proposed development would avoid significant ecological harm and could deliver an overall biodiversity net gain of 37.35% in Habitat Units, 22.59% in Hedgerow Units and 8.68% in Watercourse Units¹. The proposed development could be undertaken in accordance with relevant national and local biodiversity planning policies, and with wildlife legislation relating to designated sites, BNG and protected species.

¹ The watercourse gain would be increased to at least 10% during detailed design and/or through offsite offsetting, to ensure compliance with the mandatory 10% BNG requirement.

5.4 Biodiversity Statement

- 5.4.1 The requirements of the Environment Act 2021 (and implementing Regulations) apply to the Outline Planning Application with respect to Biodiversity Net Gain. A baseline habitat plan showing onsite habitat existing on the date of application is provided in Appendix 16. The Habitat Condition Assessment undertaken on 16 July 2025 represents the pre-development biodiversity value of the onsite habitat at the date of the Application. No destructive or degrading activities have taken place, which would impact the biodiversity baseline, and no irreplaceable habitat occurs within the Site.
- 5.4.2 An indicative BNG Assessment has been produced for the illustrative development proposals; refer to Appendix 16 and the Statutory Metric that has been submitted separately. The BNG Assessment confirms that the proposed development could deliver a gain of +31.12 Habitat Units (+37.35%), +17.61 Hedgerow Units (+22.59%) and +0.71 Watercourse Units (8.68%). The watercourse gain would be increased to at least 10% during detailed design and/or through offsite offsetting, to ensure compliance with the mandatory 10% BNG requirement.
- 5.4.3 The assessment complies with BNG-trading rules for Hedgerows and Watercourses but fails for Habitats, due to a small loss of 'high distinctiveness', lowland mixed deciduous woodland, in the west of the site where a pedestrian/cycle route is proposed. The illustrative development proposals do not currently detail the landscaping in the cycle/pedestrian routes in the west of the site, and HCA information for the woodland parcels was limited, so a precautionary approach to the BNG assessment of this area was undertaken. It is considered possible that detailed design measures could avoid impacts to the High distinctiveness woodland in this area, and thus satisfy BNG trading rules for Habitats. If not, the deficit would be addressed via additional creation of woodland units onsite or through offsite offsetting.

Table 5.1: Summary of ecological assessment

Ecological feature	Potential unmitigated impact	Avoidance, mitigation, compensation and enhancement	Residual effect
Designated sites of nature conservation importance			
Bristol Avon River LWS	Potential pollution and water quality impacts during/post-construction; potentially significant at Parish level.	Adherence to Defra pollution prevention guidance during construction, specified in the CEcoMP. SuDS design and construction of a pumping station would ensure no changes in the quantity/ quality of water leaving the Site post-construction.	No adverse effect on integrity. Neutral; not significant.
Stanley Abbey Farm Meadows LWS	No impacts predicted.	N/A	No adverse effect on integrity. Neutral; not significant.
Habitats			
Habitats within footprint of development; improved grassland, poor semi-improved grassland, ditches, scrub, woodland, trees and hedgerows.	Removal during Site clearance (not significant).	Hedgerow, tree and ditch removal minimised; retained hedgerows protected in accordance with BS5837. Loss mitigated through new habitat creation in the medium-term, including new wildflower grassland, ponds, native woodland and scrub, hedgerows and trees. Management of habitats in accordance with LEMP.	Adverse, medium-term effect at Sub-Parish level; not significant. Positive effect at Sub-Parish level in long-term.
Watercourse and retained ditches	Ditches and watercourse could be affected by silt run-off or a pollution event during construction; potentially significant at Parish level. Two culverted road crossings of the watercourse; potentially significant at Parish level.	All works would be undertaken in accordance with Defra guidance regarding the prevention of pollution. 10m landscape buffer provided either side of watercourse to include riparian habitat creation. New wetland habitat to be created within POS, including 'wildlife' ponds, SuDS features and swales.	Adverse, medium-term effect at Sub-Parish level; not significant. Neutral effect at Sub-Parish level in long-term.
Retained hedgerows, trees, and offsite woodland	Accidental damage during construction; potentially significant at Parish level.	Protective fencing around retained hedgerows and trees, including offsite woodland on southwestern Site boundary; all works undertaken in accordance with BS 5837:2012.	Neutral, not significant.

Table 5.1: Summary of ecological assessment

Ecological feature	Potential unmitigated impact	Avoidance, mitigation, compensation and enhancement	Residual effect
Protected and notable species			
Invertebrates	Loss of habitat for common and widespread species. No significant effects on notable invertebrates predicted (not significant).	New habitats including wildflower meadow, woodland, scrub and ponds would potentially benefit notable invertebrates. Provision of insect/bee bricks within built development and green spaces	Adverse, medium-term effect at Sub-Parish level; not significant. Positive effect at Sub-Parish level in long-term.
Amphibians and reptiles	Risk of killing/injury during Site clearance; potentially significant at Parish level (great crested newt). Loss of terrestrial habitat; potentially significant at Parish level (great crested newt). Risk of entrapment of amphibians in gulley pots; potentially significant at Parish level (great crested newt).	Works will be implemented under an approved (Natural England) great crested newt District Level Licensing scheme. Any grassland above 150mm to be subject to two-stage habitat manipulation under ecological supervision prior to Site clearance. Wildlife friendly gulley pot/kerb arrangement to be provided for amphibians. Provision of ten reptile hibernacula within the Public Open Space.	Adverse, short-term effect at Sub-Parish level; not significant. Neutral effect in medium-term onwards.
Birds	Damage/loss of suitable nesting and foraging habitat. Killing/injury of individual birds and their eggs (not significant). Disturbance during construction and operation. Damage to / destruction of nests (not significant).	Habitat clearance undertaken outside of main bird nesting season, or subject to pre-start check by suitably qualified ecologist. Refer also to above habitat avoidance, mitigation and compensation measures. Nesting habitat loss would be mitigated through habitat creation and management measures, and the provision of bird boxes, incorporated into the fabric of buildings and on retained trees. LEMP to provide framework for habitat management.	Adverse, medium-term effect at Sub-Parish level; not significant. Neutral effect at Sub-Parish level in long-term.
Badger	Sett damage or destruction and killing or injury of badgers. Loss of foraging habitat (not significant). Entrapment/ injury during construction (not significant).	Pre-construction survey for badgers to determine distribution and activity at setts in vicinity of construction area. Closure of setts undertaken under Natural England Badger Development Licence, if required. Retained setts buffered from the development by a 20m Exclusion Zone. Construction-management working methods implemented. New habitat creation suitable for badgers.	Adverse, long-term effect at Sub-Parish level; not significant.

Table 5.1: Summary of ecological assessment

Ecological feature	Potential unmitigated impact	Avoidance, mitigation, compensation and enhancement	Residual effect
	Habitat fragmentation, lighting and roads (not significant). Vehicle collisions / mortality.	Lighting design for public realm to minimise impacts on badgers and maintain dark corridors.	
Bats	Habitat clearance and lighting could affect bat usage (commuting/foraging/roosting) of the Site during construction (not significant). Light spill from new buildings and roads, forming potential 'barriers' to light-averse bat species; potentially significant at Parish level.	All contractors' compounds located a minimum of 10m away from retained habitats and 'dark' corridors. Restrictions on construction lighting timing between March and October. Sensitive post-construction lighting strategy to prevent spill from external light sources and maintain habitat corridors around the Site. Ecology input to post-construction lighting strategy. Bat boxes included within new buildings and on retained trees. Management of new and retained habitats in accordance with LEMP.	Adverse, long-term effect at Sub-Parish level; not significant.
Otter	Potential disturbance to otters through construction activities and water pollution (not significant). Potential disturbance post-construction from increased levels of anthropogenic disturbance and two culverted road crossings of watercourse; potentially significant at Parish level.	Pre-construction check of watercourse. During construction, no lighting left on overnight, and any security lighting would be low-height and motion activated on short-timers. Contractors' compounds to be located away from watercourse. Riparian corridor buffer maintained between the watercourse and built development. The lighting design of the development would ensure that lighting effects on otters were minimised, and 300mm diameter pipes installed either side of the culvert to facilitate otter movement	Adverse, long-term effect at Sub-Parish level; not significant.
Other mammals	Loss of habitat for hedgehog and brown hare. Potential for direct effects (killing/injury) on hedgehog during Site clearance. Fenced gardens could potentially impede the movement of hedgehogs across the Site (not significant). Construction likely to displace brown hare, if present (not significant).	Removal of suitable habitat preceded by a check for hedgehogs by a suitably qualified ecologist. Hedgehog passes created within new garden fences. Habitat loss would be mitigated through new habitat creation.	Hedgehogs: Adverse, medium-term effect at Sub-Parish level, not significant. Neutral effect in long-term. Brown hare: Adverse long-term effect at Sub-Parish level, not significant.

Table 5.2: Residual effects predicted to remain after the application of mitigation measures

Residual effect	Importance of receptor	Magnitude of change	Duration	Nature	Degree of effect	Level of certainty
Terrestrial habitats within Site (removal during construction)	Low	Medium	Medium term	Adverse	Slight	Absolute
Terrestrial habitats within Site (habitat creation)	Low	Medium	Long term	Positive	Slight	Reasonable
Onsite watercourse (pollution and road crossings)	Medium	Small	Medium term	Adverse	Slight	Reasonable
Onsite watercourse (riparian habitat creation)	Medium	Negligible	Long term	Neutral	Negligible	Reasonable
Invertebrates (habitat loss)	Low	Medium	Medium term	Adverse	Slight	Reasonable
Invertebrates (habitat creation)	Low	Medium	Long term	Positive	Slight	Reasonable
Amphibians and reptiles (habitat loss and risk of killing / injury / entrapment)	Low	Medium	Short term	Adverse	Slight	Reasonable
Amphibians and reptiles (habitat manipulation, hibernacula creation and DLL for great crested newt)	Low	Negligible	Medium term	Neutral	Negligible	Reasonable
Birds (habitat loss and risk of killing / injury / disturbance)	Low	Medium	Medium term	Adverse	Slight	Reasonable
Birds (habitat creation)	Low	Negligible	Long term	Neutral	Negligible	Reasonable
Badger (sett damage / destruction, risk of killing / injury / entrapment, habitat loss)	Low	Medium	Long term	Adverse	Slight	Reasonable
Otter (disturbance arising from construction activities and road	Low	Medium	Long term	Adverse	Slight	Reasonable

Table 5.2: Residual effects predicted to remain after the application of mitigation measures

Residual effect	Importance of receptor	Magnitude of change	Duration	Nature	Degree of effect	Level of certainty
crossing of watercourse)						
Bats (habitat loss / fragmentation)	Low	Medium	Long term	Adverse	Slight	Reasonable
Hedgehog (habitat loss and risk of killing / injury)	Low	Medium	Medium term	Adverse	Slight	Reasonable
Hedgehog (habitat creation and passes in fences)	Low	Negligible	Medium term	Neutral	Negligible	Reasonable
Brown hare (habitat loss)	Low	Medium	Long term	Adverse	Slight	Reasonable

6 References

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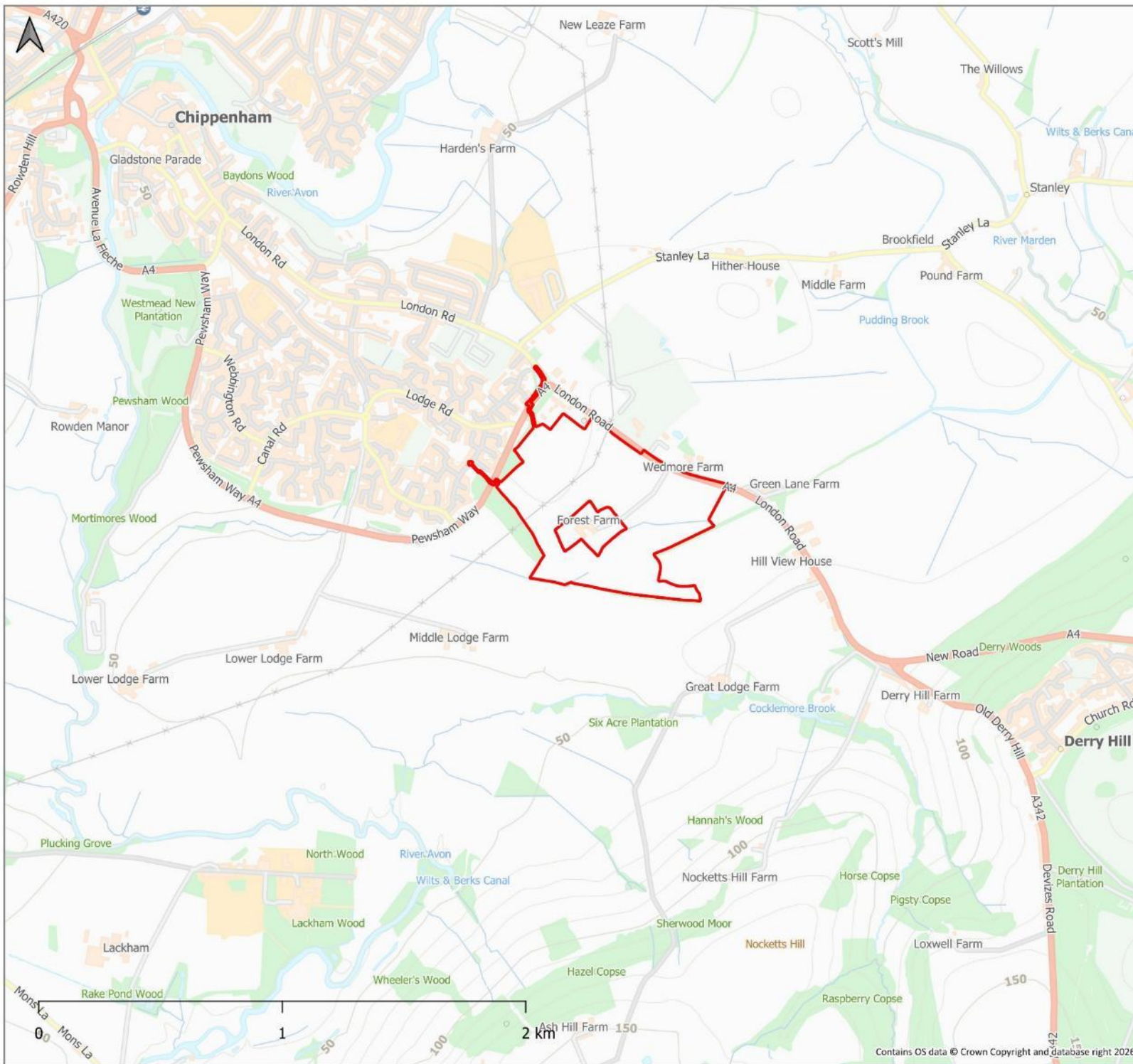
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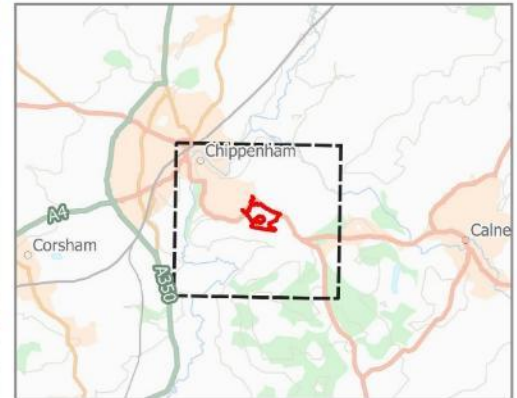
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Figure 1: Site Location Plan



Key

Site boundary



ead ecology www.eadecology.co.uk	Gleeson Land		
	Forest Farm, Chippenham		
	Site Location Plan		
	01/04/2026	Created by: EG	Scale at A3 1:15,000

Figure 2: Land Use Parameter Plan



- Application boundary
- Residential
(Including streets and open space - details to be resolved in Reserved Matters application)
- Local centre
(Precise location determined at detailed design stages +/- 10m of alignment shown. Mixed use centre including residential)
- Potential link road
(Precise location determined at detailed design stages +/- 10m of alignment shown)
- Link road work within highway land
(Precise location determined at detailed design stages +/- 10m of alignment shown)
- Primary road
(Precise location determined at detailed design stages +/- 10m of alignment shown)
- Connector road
(Precise location determined at detailed design stages +/- 10m of alignment shown)
- Strategic cycle route
(Precise location determined at detailed design stages +/- 10m of alignment shown)
- Green infrastructure
(Including natural and semi-natural green space, recreation, drainage and attenuation, tree and shrub planting (existing and proposed), and play areas (NEAP/LEAP) and playable spaces - details to be resolved in Reserved Matters application)
- Natural green space
(Including trees, woodland, scrub, wetland and meadow)
- Attenuation basins
(Precise location determined at detailed design stages)
- Allotments
(Including parking provision. Precise location determined at detailed design stages)
- Secondary access street informal across open space
(Precise location determined at detailed design stages)
- Farm access safeguarded vehicle link
(Precise location determined at detailed design stages +/- 10m of alignment shown)
- Land safeguard for connection to adjoining growth area parcel
(precise location determined at detailed design stages +/- 10m of alignment shown)
- Safeguarded land for potential link road
(precise location determined at detailed design stages +/- 10m of alignment shown. Refer to detailed application plans)

Notes/Revisions

Forest Farm, Chippenham
Gleeson Land

0 50 100 m

N

Parameter Plan Land Use and Landscape

Status:	DRAFT	Drawn by:	FH	Checked by:	IP
Project Number:	227610	Scale @ A2:	1:2500	Date:	23/10/2024
Drawing Number:	TOR-PP-002	Revision:	C		

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**Figure 3: Phase 1 Habitat Survey Plan, Target Notes and
Photographs**

Target Note number	Description
1	Slurry / waste water pit 
2	Farm yard with agricultural buildings of a range of ages and construction types. 
3	Mature oak with rot holes
4	Dead tree
5	Mature oak with dead limbs and rot holes

6	Mature oak with rot holes
7	Mature oak with dead limbs and loose / raised bark
8	Mammal track through hedge
9	Residential house with gardens
10	Scrub / woodland edge along old canal way

11

Site boundary borders narrow belt of semi-natural broadleaved woodland.



12

Small orchard over amenity grassland within residential garden.



13

Sections of grassland adjacent to the access track were very waterlogged.



Figure 4: Illustrative Landscape Strategy



- Site Boundary
- Existing Woodland with 10m Buffer
- Existing Veteran Tree
- Existing Scrub
- Existing Hedgerow
- Existing Watercourse
- Existing Occasionally Wet Grassland
- Proposed Woodland
- Proposed Tree
- Proposed Scrub
- Proposed Hedgerow
- Proposed Species Rich Hedgerow with Bank
- Proposed Attenuation
- Proposed Wildlife Pond with Marginal Planting
- Proposed Swale
- Proposed Species Rich Grassland
- Proposed Amenity Grass
- Proposed Surfaced Path
- Proposed Mown and Loose Chip Path
- Proposed Cycle Path
- Public Right of Way
- Indicative Play Location
- Proposed Allotment

client	Gleeson Land		
project title	Land at Forest Farm, Chippenham		
drawing title	Illustrative Landscape and Ecology Strategy		
date	25 JUNE 2026	drawn by	JWh
drawing number	edp7351_d011j	checked	TRa
scale	1:2,500 @ A2	QA	DJo



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Google Earth

Figure 5: Ecological Constraints and Opportunities Plan



Key

- Main/annexe badger sett (offsite)
- Outlier badger sett
- ▲ Pipistrelle tree roost
- Bat habitat corridor
- ✂ Hedgerow loss
- New hedgerow planting
- Watercourse

Appendix 1: Wildlife Legislation, Species Legislation and Conservation Status

Wildlife Legislation

The Environment Act (and implementing Regulations)

This Act, and implementing Regulations, brings into law a number of environmental processes, strategies and requirements. Legislation of principal relevance is the mandatory requirement for relevant development of 10% Biodiversity Net Gain (BNG).

Conservation of Habitats and Species Regulations 2017 (as amended)

These Regulations, also referred to as the 'Habitats Regulations', provide for the designation and protection of 'European Sites' (the National Site Network). They convey a statutory requirement for local planning authorities to undertake a 'Habitats Regulations Assessment' of the potential impacts of plans and projects, including development proposals, on European Sites. The provisions also include protection of 'European Protected Species' (EPS). Under the Regulations, local planning authorities have to consider three 'derogation tests' when deciding whether to grant permission for a development that affects an EPS, which are as follows:

- the development must be for over-riding public interest or for public health and safety;
- there are no satisfactory alternatives to the proposed development; and
- the favourable conservation status of the EPS concerned must be maintained.

Wildlife and Countryside Act 1981 (as amended)

This Act is the principal wildlife legislation in Great Britain. It includes provisions for important habitats to be designated and protected as Sites of Special Scientific Interest (SSSIs). Numerous plant and animal species, and the places that they use for shelter and protection, are also protected under the Act, including all birds, their nests and eggs.

Countryside and Rights of Way Act 2000

Referred to as the CROW Act, this legislation increases the protection of SSSIs and strengthens wildlife enforcement action. The Act also strengthens the protection of protected species under the Wildlife and Countryside Act 1981 (as amended) through the introduction of a new offence of 'reckless disturbance'.

Natural Environment and Rural Communities Act 2006

This Act places a duty on all public bodies and statutory undertakers to have due regard to the conservation of biodiversity in all their functions. It also requires the publication of a list of habitats and species of principal importance for the conservation of the biodiversity. This list, known as the Section 41 list, includes all Priority Habitats and Species of Principal Importance for the Conservation of Biodiversity in England.

Protection of Badgers Act 1992

This Act was introduced primarily for animal welfare reasons, as opposed to species conservation. It provides protection of badgers and their setts.

Hedgerow Regulations 1997 (as amended)

These Regulations include provisions for the protection of hedgerows and make it an offence to remove 'important' hedgerows without consent from the local planning authority. Where planning permission is granted for a development proposal, the removal of 'important' hedgerows is deemed to be permitted.

Species legislation and conservation status

Invertebrates

A number of UK invertebrates are protected under UK legislation, including the Wildlife and Countryside Act 1981 (as amended). In addition, numerous species are Priority Species.

Plants

All wild plants are protected against unauthorised removal or uprooting under Section 13 of the Wildlife and Countryside Act 1981 (as amended). Plants listed on Schedule 8 of the Act (e.g. stinking goosefoot, red helleborine, monkey orchid) are afforded additional protection against picking, uprooting, destruction and sale. Bluebell (*Hyacinthoides non-scripta*) is protected against sale only. Further species are also protected under the Conservation of Habitats and Species Regulations 2017.

Notable plant species include those that are listed as:

- Nationally vulnerable – A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A-E for Vulnerable, and is therefore considered to be facing a high risk of extinction in the wild (Cheffings C M & Farrell L (Eds) (2005) *Species Status No. 7 – The Vascular Plant Red Data List for Great Britain*, JNCC (online).
- Nationally scarce – species recorded in 16-100 hectads in Great Britain.
- Nationally rare – species occurring in 15 or fewer hectads in Great Britain.

Section 14 of the Wildlife and Countryside Act 1981 (as amended) prohibits the planting of certain invasive plant species in the wild, or otherwise causing them to grow there. Prohibited plants are listed on Part 2 of Schedule 9 and include Japanese knotweed, Himalayan balsam and giant hogweed.

Amphibians

There are seven native amphibian species present in Britain. These are afforded varying degrees of protection under UK legislation. Great crested newts (*Triturus cristatus*) and their habitat are afforded full protection under the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CRoW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill a great crested newt.
- Damage or destroy any place used for shelter or protection by great crested newts, including resting or breeding places; or intentionally or recklessly obstruct access to such a place.
- Deliberately, intentionally or recklessly disturb great crested newts.

Great crested newt and common toad (*Bufo bufo*) are Priority Species.

Reptiles

Slow-worm (*Anguis fragilis*), viviparous/common lizard (*Zootoca vivipara*), adder (*Vipera berus*) and grass snake (*Natrix natrix*) are protected under the Wildlife and Countryside Act 1981 (as amended) against intentional killing and injuring. These species are also Priority Species.

Birds

The bird breeding season generally lasts from March to early September for most species. All birds are protected under the Wildlife and Countryside Act (1981) (as amended) and the Countryside & Rights of Way (CRoW) Act 2000. This legislation makes it illegal, both intentionally and recklessly, to:

- kill, injure or take any wild bird.

- take, damage or destroy the nest of any wild bird while it is being built or in use.
- take or destroy the eggs of any wild bird.

Furthermore, birds listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) are protected against intentional or reckless disturbance whilst nest building and when at or near a nest containing eggs or young. Dependent young of Schedule 1 species are also protected against disturbance.

In addition to this legal protection, the leading governmental and non-governmental conservation organisations in the UK have reviewed the population status of the birds regularly found here and produced a list of birds of conservation concern. Of the 245 species assessed, 70 were placed on the Red List of high conservation concern, 103 on the Amber List of medium conservation concern and 72 on the Green List of low conservation concern:

- Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.
- Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; and those with internationally important or localised populations.

Badgers

Badger (*Meles meles*) is a widespread and common species. However, they are legally protected under The Protection of Badgers Act 1992, due to animal welfare concerns. Under this legislation it is illegal to:

- Wilfully kill, injure, take, or cruelly ill-treat a badger, or attempt to do so.
- Intentionally or recklessly interfere with a sett by disturbing badgers whilst they are occupying a sett, damaging or destroying a sett, or obstructing access to it.

A badger sett is defined in the legislation as “any structure or place, which displays signs indicating current use by a badger”.

Bats

There are 18 species of bats found in the UK, 17 of which are known to breed here. The conservation status of these species is summarised in the table below:

Common name	Scientific name	IUCN Red List*	Priority Species
Greater horseshoe	<i>Rhinolophus ferrumequinum</i>	LC	Yes
Lesser horseshoe	<i>Rhinolophus hipposideros</i>	LC	Yes
Daubenton's	<i>Myotis daubentonii</i>	LC	No
Brandt's	<i>Myotis brandtii</i>	LC	No
Whiskered	<i>Myotis mystacinus</i>	LC	No
Natterer's	<i>Myotis nattereri</i>	LC	No
Bechstein's	<i>Myotis bechsteinii</i>	NT	Yes
Alcathoe bat	<i>Myotis alcathoe</i>	DD	No
Greater mouse-eared	<i>Myotis myotis</i>	LC	No
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	LC	No
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	LC	Yes
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	LC	No
Serotine	<i>Eptesicus serotinus</i>	LC	No
Noctule	<i>Nyctalus noctula</i>	LC	Yes

Common name	Scientific name	IUCN Red List*	Priority Species
Leisler's	<i>Nyctalus leisleri</i>	LC	No
Barbastelle	<i>Barbastella barbastellus</i>	NT	Yes
Brown long-eared	<i>Plecotus auritus</i>	LC	Yes
Grey long-eared	<i>Plecotus austriacus</i>	LC	No

*IUCN categories: LC Least Concern, NT Near Threatened, DD Data Deficient

All bat species are afforded full protection under UK legislation, including the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill a bat.
- Damage or destroy a bat roost; or intentionally or recklessly obstruct access to bat roosts.
- Deliberately, intentionally or recklessly disturb a bat, including in particular any disturbance which is likely:
 - to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or
 - in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
 - to affect significantly the local distribution or abundance of the species to which they belong.

A bat roost is defined in the legislation as “any structure or place which a bat uses for shelter or protection”. Roosts are protected whether or not bats are present at the time.

Otter

Otters (*Lutra lutra*) are fully protected under UK legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CROW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill an otter.
- Damage or destroy any structure or place used for shelter or protection by an otter; or intentionally or recklessly obstruct access to such a place.
- Deliberately, intentionally or recklessly disturb an otter whilst it is occupying a structure or place which it uses for shelter or protection.

Otter is a Priority Species.

Water vole

Water vole (*Arvicola amphibious*) are afforded full protection under the Wildlife and Countryside Act 1981 (as amended), which make it illegal to:

- Kill, injure or take a water vole.
- intentionally or recklessly destroy, damage or obstruct access to any structure or place that is used by a water vole for shelter or protection.
- intentionally or recklessly disturb a water vole whilst it is in a place used for shelter or protection.

Water vole is a Priority Species.

Common/Hazel dormouse

The hazel dormouse (*Musccardinus avellanarius*) is fully protected under UK legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way (CROW) Act 2000 and the Conservation of Habitats and Species Regulations 2017 (as amended). Together, this legislation makes it illegal to:

- Deliberately capture, injure or kill a dormouse.
- Damage or destroy any structure or place used for shelter or protection by a dormouse; or intentionally or recklessly obstruct access to such a place.
- Deliberately, intentionally or recklessly disturb a dormouse whilst it is occupying a structure or place which it uses for shelter or protection.

Hazel dormouse is a Priority Species.

Appendix 2: National Planning Policy

National Planning Policy Framework (2024)

The National Planning Policy Framework (NPPF) includes the Government's policy on the protection of biodiversity through the planning system. The following policies are relevant to the Proposed Development:

187. 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 and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs;*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.*

188. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

192. To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity²; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and*
- b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gain for biodiversity.*

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

² Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geodiversity conservation and their impact with the planning system.

- 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 reasons³ 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.*

195. The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats sites.

³ For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

Appendix 3: Local Planning Policy

Wiltshire Core Strategy (adopted 2015)

Core Policy 50 Biodiversity and Geodiversity

Protection

Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale. There is an expectation that such features shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity and functionality in the long-term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource, and secure the integrity of local ecological networks and provision of ecosystem services.

All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development.

Any development potentially affecting a Natura 2000 site must provide avoidance measures in accordance with the strategic plans or guidance set out in paragraphs 6.75-6.77 where possible, otherwise bespoke measures must be provided to demonstrate that the proposals would have no adverse effect upon the Natura 2000 network. Any development that would have an adverse effect on the integrity of a European nature conservation site will not be in accordance with the Core Strategy.

Biodiversity enhancement

All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services. Such enhancement measures will contribute to the objectives and targets of the Biodiversity Action Plan (BAP) or River Basin/ Catchment Management Plan, particularly through landscape scale projects, and be relevant to the local landscape character.

Local sites

Sustainable development will avoid direct and indirect impacts upon local sites through sensitive site location and layout, and by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or disturbance to local sites will generally be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts:

- i. cannot reasonably be avoided
- ii. are reduced as far as possible
- iii. are outweighed by other planning considerations in the public interest
- iv. where appropriate compensation measures can be secured through planning obligations or agreements.

Development proposals affecting local sites must make a reasonable contribution to their favourable management in the long-term. The Council will have regard to the environmental implications of development and will promote and encourage enhancement of the environment. Development will not be permitted where it would result in material detriment to the environment by virtue of:

- a) loss or damage to important environmental assets, such as buildings of historical or architectural interest, local watercourses, important archaeological sites and monuments and areas of conservation, ecological or landscape value;
- b) harm to the visual character and distinctiveness of a locality, particularly in respect of the design and scale of the development and its relationship to its surroundings;
- c) loss of general amenity, including material loss of natural light and privacy enjoyed by neighbours and disturbance resulting from the emission of noise, light or vibration;
- d) levels of traffic which are incompatible with the local highway network or cause significant environmental harm by virtue of noise and disturbance;
- e) potential pollution of air, land or water, including that arising from light pollution and from the storage and use of hazardous substances.

The Council will seek, as part of a development proposal, to resolve or limit environmental impacts. This may include the submission of a flood-risk/run-off assessment to determine the potential flood risk to the development, the likely effects of the development on flood risk to others, whether mitigation is necessary, and if so, whether it is likely to be effective and acceptable. The Council will also seek remedial measures to deal with existing problems such as land contamination.

Core Policy 57 Wiltshire's canals

The restoration and reconstruction of the Wilts and Berks and Thames and Severn canals as navigable waterways is supported in principle. The historic alignments of the Wilts and Berks, including the North Wilts Branch, and Thames and Severn Canals, as identified on the policies map, will be safeguarded with a view to their long-term re-establishment as navigable waterways.

These alignments will be safeguarded by:

- i. not permitting development likely to destroy the canal alignment or its associated structures, or likely to make restoration more difficult
- ii. ensuring that where the canal is affected by development, the alignment is protected or an alternative alignment is provided.

Proposals will be permitted that are designed to develop the canal's recreational and nature conservation potential, in particular, the use of the old line of the canal for walking, cycling and interpretation.

Proposals for the reinstatement of canal along these historic alignments or any alternative alignments will need to demonstrate that the cultural, historic and natural environment will be protected and enhanced, with no overall adverse effect, and that potential impacts on ecology, landscape, flood risk, water resources (abstraction) and water quality have been fully assessed and taken into account. Proposals for the reinstatement of discrete sections of the canal will also need to demonstrate that the potential environmental impacts of the restoration project as a whole have been assessed and taken into account.

Chippenham Neighbourhood Plan 2023-2038

Policy GI1 Protecting and Enhancing Biodiversity

Features of significant biodiversity value should be retained and enhanced as follows:

- i. Retain ancient trees and hedgerows and/or trees and hedgerows of arboricultural value, additional planting should extend tree cover
- ii. Retain blue infrastructure and where sustainable drainage systems (SuDS) are being created these should be multifunctional
- iii. Retain native plants and wildflower areas and extend through landscaping proposals
- iv. Protect bat habitats
- v. Incorporate into new construction:
 - Green/brown roofs (where appropriate)
 - Integrated bird and bat boxes
 - Swift bricks and bee bricks
 - 13cm x 13cm holes in fencing for hedgehogs and other small mammals to pass through

Major development proposals must demonstrate a Biodiversity Net Gain of at least 10%, secured for at least 30 years. Proposals are encouraged to deliver in excess of 10% Biodiversity Net Gain.

Development proposals on sites which are located adjacent to existing green spaces and/or open countryside will demonstrate, through their layout and/or landscape design, that they provide an appropriate and sensitive interface to existing adjoining habitats.

Accreditation of proposals as meeting Building with Nature standards will greatly assist their assessment against this Policy.

Policy GI5 Trees, Woodlands and Hedgerows

Existing Trees, Woodlands & Hedgerows

Proposals should seek to protect existing trees, woodland and hedgerows and avoid removal wherever possible. Ancient, veteran and mature trees or trees and hedgerows of ecological, arboricultural or amenity value should be retained. Protection before and after development should be in accordance with British Standard BS5837.

Development proposals must consider with care the separation between construction and the edge of a woodland or tree belt and it must be satisfactorily demonstrated, through the detailed design process, that the proposal would have no adverse impacts on trees, ecology, people, or property. A buffer zone of at least 15m, consisting of semi-natural habitat, is considered appropriate between new construction and woodland.

New and Replacement Tree Planting

Development proposals should, appropriately to their scale:

- a) Incorporate gateway or landmark trees for placemaking purposes
- b) Deliver new street trees

Where there is an unavoidable loss of trees on site, the number of replacement trees shall have regard to the advice set out in the Tree Planting Guide (Annexe 4).

In selecting new or replacement tree species regard shall be had to the advice set out in the Tree Planting Guide – with a preference for native, large-canopied and orchard species.

Tree Canopy Cover

Development proposals on sites outside of the town centre and greater than 0.5 ha in size should demonstrate an increase in site tree canopy cover of at least 6%. This will principally be achieved through planting of additional and replacement trees, but where it can be demonstrated that this is impractical, the use of other green infrastructure (e.g. green roofs) can be used to deliver equivalent benefit. On residential development sites, some of this tree canopy cover will be expected to be met through incorporation of new trees within rear gardens. Reference should be made to the advice set out in the Tree Planting Guide (Annexe 4).

North Wiltshire Local Plan 2011

‘Saved’ Policy NE14 Trees and the control of new development

Permission will not be granted for proposals that would result, or be likely to result, in the loss of trees, hedges, lakes/ponds or other important landscape or ecological features that could be successfully and appropriately incorporated into the design of a development. Planning conditions will be imposed and Tree Preservation Orders made, for safeguarding single and small groups of trees in the interests of public amenity.

It is the duty of the local planning authority to ensure, whenever it is appropriate, that in granting planning permission for any development adequate provision is made, by the imposition of conditions, for the preservation or planting of trees. The latter should be substantially native tree species of local provenance.

It will be expected that assessments to determine the nature conservation and landscape value features both within and adjacent to sites will be undertaken. Details of any assessment should be submitted with a planning application.

For example, a tree survey should be carried out of the site and directly adjacent land by a competent expert to establish the quality and condition of trees potentially affected by development as appropriate.

Development shall be designed to ensure the longevity of retained vegetation and features through appropriate management and mitigation measures. British Standard 5837: 1991 - Guide for Trees in Relation to Construction, offers relevant guidance for trees.

Wiltshire Council Local Plan Pre-Submission Draft 2020 - 2038

Policy 88 Biodiversity and Geodiversity

Protection

Development proposals will need to clearly demonstrate how the mitigation hierarchy has been sequentially applied. Development proposals must demonstrate how they protect features of nature conservation value, both terrestrial and aquatic, and geological value as part of the design rationale. There is an expectation that such features shall be retained, sufficiently buffered, and managed favourably to maintain their ecological value, connectivity and functionality in perpetuity. Furthermore, development proposals must secure and implement measures, including appropriate compensatory measures where necessary, to ensure no net loss of biodiversity and the local biodiversity resource, and to secure the integrity of local ecological networks and provision of ecosystem services. All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development. Any development potentially affecting a UK National Site Network site must provide avoidance measures in accordance with the strategic plans or guidance set out from paragraphs 5.135 where possible, otherwise bespoke measures must be provided to demonstrate that the proposals would have no adverse effect upon the UK National Site Network. Any development that would have an adverse effect on the integrity of a European nature conservation site and where the impacts cannot be satisfactorily mitigated, will not be supported.

Local sites, priority habitat and habitats of principal importance⁴ and local ecological networks

Development will avoid direct and indirect impacts upon local sites by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or disturbance to local sites will be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts:

1. cannot reasonably be avoided;
2. are reduced as far as possible;
3. are outweighed by other planning considerations of overriding public interest;
4. where appropriate compensation measures can be secured through planning obligations or agreements.

Development proposals affecting local sites must make a reasonable contribution to their favourable management in the long-term. Development proposals should avoid negative impacts upon priority habitat, habitats of principal importance, ecological networks, and wildlife corridors, instead promoting their conservation, restoration, and enhancement alongside the recovery of priority species.

Biodiversity in the built environment

In addition to features required as part of biodiversity net gain, mitigation or compensation, all proposals are required to incorporate features of biodiversity value tailored to the specific proposals, relevant local receptors and in accordance with best practice to maximise potential benefits. As a minimum, the following are required within new proposals:

⁴ As detailed within Section 41 of the Natural Environment and Rural Communities Act 2006

1. integrate integral bird nest bricks (e.g., swift bricks) at a minimum of two per dwelling;
2. provision of integrated bat boxes;
3. provision of overhanging eaves suitable for nesting house martins in all major development, supplemented by the provision of nest cups; and
4. hedgehog highways integrated throughout the design of development (e.g., suitable gaps in all garden fences) between gardens and the wider ecological network to facilitate movement of protected species.

Other features that should be included (but are not limited to):

1. provision of wildflower verges and meadows throughout the development managed to ensure their longevity (e.g., provision of suitable native seeding and topsoil provisions);
2. undertake nature friendly native planting schedules throughout development (e.g., planting wildlife friendly show gardens, incorporating native hedgerows and tree planting);
3. design site lighting to avoid harm and optimise nature conservation (e.g., designing in dark corridors);
4. optimise the ecological value of sustainable urban drainage systems where required (e.g., through the provision of swales and pools, connected to the wider ecological network, planted with native vegetation);
5. incorporate features within the public realm to facilitate nature recovery and access to nature (e.g., bat walls/lofts, swift towers, log piles, insect hotels, invertebrate/bee bricks, reptile hibernacula, green and brown roofs / walls).

Policy 89 Biodiversity Net Gain

Development⁵ must achieve a minimum of 20% Biodiversity Net Gain, or higher as stipulated in national legislation and/or policy or supplementary guidance, over the pre-development biodiversity value as measured by the latest Biodiversity Metric⁶. Exempted development⁷ must achieve no net loss of biodiversity and should achieve appropriate net gains, aspiring to deliver at least 20% biodiversity net gain. Biodiversity net gain must be delivered in the following hierarchical manner: 1. Onsite delivery: where delivered on site habitats should be functionally linked to the wider habitat network creating coherent ecological networks. 2. Off-site delivery: should prioritise contributing to nearby habitat recovery and creation strategies as identified within adopted mitigation strategies, strategic wildlife corridors, Local Nature Recovery Strategy⁸ and, Green and Blue Infrastructure Strategy. 3. Off-site delivery: on an alternative suitable site, prioritising strategic delivery in the Local Nature Recovery Strategy area. 4. Credits: as a last resort, and where it is agreed by the Local Planning Authority no suitable alternatives exist, through the purchase of an appropriate amount of national biodiversity units/credits. Planning applications subject to mandatory Biodiversity Net Gain must submit a Biodiversity Gain Plan⁹ at the application stage that should include: how the mitigation hierarchy has been adhered to; justification for the baseline date and assessed value of the site prior to development, including a brief synopsis of the site's historic biodiversity value and appointing strategic significance in metric; pre and post-development

⁵ Except where exemptions, modifications or exclusions have been made by legislation.

⁶ As per the latest iteration, currently Biodiversity Metric 4.0 with qualifying small sites utilising the latest small sites metric.

⁷ As stipulated within legislation.

⁸ Prior to Wiltshire adopting a Local Nature Recovery Strategy off site habitat delivery, created or enhanced, should be well located to maximise opportunities for local nature recovery and this be demonstrated within the Biodiversity Gain Plan.

⁹ As per guidance within The Environment Act 2021 and/or subsequent legislation.

biodiversity value of onsite habitats and created off site habitats; demonstrate how net gains are achieved through on site, off site or purchased credits, clarifying and explaining the predicted biodiversity outcomes both qualitatively and quantitatively; how a positive proportionate contribution has been made to the ecological networks and priorities as outlined within the Local Nature Recovery Strategy and regional Nature Recovery Networks and for maintaining or creating local ecological networks through habitat creation, protection, enhancement, restoration and management. The assessments underpinning, and the Biodiversity Gain Plan itself, must be undertaken by a suitably qualified and/or experienced ecologist and be submitted together with baseline and proposed habitat mapping in a digital format with the application.

Sites where net gain is provided (on or off site) must be managed and monitored by the applicant or an appropriate body funded by the applicant for a minimum period of 30 years. Annual monitoring reports detailing the sites condition must be submitted to the Council each year over this period. A management plan must be provided at the application stage detailing how the post-development biodiversity values of the site and any supporting off-site provision will be secured, managed, and monitored in perpetuity. Where there is evidence of neglect or damage to any of the habitats on development sites reducing their biodiversity value their deteriorated condition will not be taken into consideration and steps will be taken to establish the previous ecological baseline¹⁰ of the site in order to decide the acceptability of any development proposals. Development proposals where the principal objective is to conserve or enhance biodiversity and geodiversity interests will be supported in principle.

Policy 90 Woodland, Hedgerows, and Trees

Proposals for major development shall make provision for the retention and enhancement of Wiltshire's woodlands, hedgerows, and trees, and shall incorporate these assets into development design as part of the wider Green and Blue Infrastructure (GBI) Network, by:

1. contributing to the tree planting targets of Wiltshire Council's Climate Strategy and Woodland, Hedgerow and Tree Strategy¹¹, following the principles of 'Right Tree, Right Place';
2. supporting the economic benefits of woodland and tree planting from agroforestry, leisure, tourism as well as wider ecosystem services such as natural flood management and climate resilience;
3. where applicable, supporting the aims and objectives of the Great Western Community Forest;
4. where applicable and acceptable in highway terms, ensuring on major developments that tree lined streets, community orchards and garden tree planting, are fully integrated into proposals;
5. seeking, where applicable, to increase woodland and street tree cover in existing urban areas in Wiltshire to create shade, mitigate storm water runoff, improve air quality, sequester carbon, and improve the health and well-being of local communities;
6. ensuring the long-term sustainability of woodland, hedgerow, and tree planting, through the appropriate specification of plants, planting accessories, soil volumes, and long-term management to ensure the establishment to maturity of planting schemes in Wiltshire and minimise wastage.

¹⁰ Schedule 14 of the Environment Act enables planning authorities to recognise habitat degradation on a site since 30th January 2020, where necessary utilising an earlier habitat state as the baseline for biodiversity net gain calculation.

¹¹ When established.

Appendix 4: Botanical Species List

Scientific Name	Common Name
Trees	
<i>Acer campestre</i>	Field maple
<i>Acer pseudoplatanus</i>	Sycamore
<i>Betula pendula</i>	Silver birch
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Euonymus europaeus</i>	Spindle
<i>Fraxinus excelsior</i>	Ash
<i>Ilex aquifolium</i>	Holly
<i>Prunus spinosa</i>	Blackthorn
<i>Quercus robur</i>	Pedunculate oak
<i>Salix spp</i>	Willow
<i>Salix cinerea</i>	Grey willow
<i>Salix viminalis</i>	Osier
<i>Sambucus nigra</i>	Elder
<i>Ulmus sp.</i>	Elm species
<i>Malus x domestica</i>	Apple
<i>Prunus avium</i>	Wild cherry
Shrubs	
<i>Cornus sanguinea</i>	Common dogwood
<i>Ligustrum vulgare</i>	Garden privet
<i>Lonicera periclymenum</i>	Honeysuckle
<i>Prunus spinosa</i>	Blackthorn
<i>Rosa arvensis</i>	Field rose
<i>Rosa canina</i>	Dog-rose
<i>Rubus fruticosus agg.</i>	Bramble
<i>Viburnum opulus</i>	Guelder rose
Grasses, sedges, rushes and herbs	
<i>Agrostis capillaris</i>	Common bent
<i>Anthriscus sylvestris</i>	Cow parsley
<i>Apium nodiflorum</i>	Fool's watercress
<i>Arum maculatum</i>	Lords-and- Ladies
<i>Brachypodium sylvaticum</i>	False brome
<i>Cirsium arvense</i>	Creeping thistle
<i>Dactylis glomerata</i>	Cock's-foot
<i>Deschampsia cespitosa</i>	Tufted hairgrass
<i>Epilobium sp.</i>	Willowherb sp.
<i>Galium aparine</i>	Cleavers
<i>Glyceria maxima</i>	Reed sweet grass
<i>Hedera helix</i>	Ivy
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Hyacinthoides non-scripta</i>	English bluebell
<i>Juncus inflexus</i>	Hard rush
<i>Lolium perenne</i>	Rye grass
<i>Mercurialis perennis</i>	Dog's mercury
<i>Oenanthe crocata</i>	Hemlock water dropwort
<i>Phalaris arundinacea</i>	Reed canary grass

Scientific Name	Common Name
<i>Phragmites australis</i>	Common reed
<i>Phyllitis scolopendrium</i>	Hart's tongue fern
<i>Ranunculus ficaria</i>	Lesser celandine
<i>Ranunculus repens</i>	Creeping buttercup
<i>Rorippa nasturtium-aquaticum</i>	Water-cress
<i>Rumex crispus</i>	Curled dock
<i>Rumex obtusifolius</i>	Broad-leaved dock
<i>Taraxacum agg.</i>	Dandelion
<i>Trifolium repens</i>	White clover
<i>Urtica dioica</i>	Common nettle
<i>Veronica beccabunga</i>	Brooklime
<i>Veronica persica</i>	Common field speedwell

Appendix 5: Invasive and Non-native Plant Species Survey

Invasive and non-native plant species survey

1 Methodology

Surveys for invasive and non-native plant species were undertaken on 13 May 2024. The purpose of the surveys was to identify and map all legally-controlled plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). All surveys and analyses were undertaken by suitably trained botanical surveyors holding BSBI Field Identification Skills Certificates - Level 5.

2 Limitations

There were no limitations to the survey.

3 Results

No plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the Survey Area.

4 References

English Nature (2004) Species Conservation Handbook. English Nature, Peterborough.

Appendix 6: Hedgerow Survey

Hedgerow survey

1 Methodology

The hedgerow survey was undertaken on 04 May 2022 in accordance with survey guidelines published by Defra (2007). The survey focused on the ecological component of the assessment; no cultural heritage aspects were assessed. For each hedgerow, a 30m section(s) was surveyed in detail, identifying any woody and woodland indicator species present. Other features, such as the presence of a bank, gaps or hedgerow trees were also noted. Each hedgerow was then assessed against the criteria set out in the Hedgerow Regulations to establish whether or not it was 'Important'.

All surveys and analyses were undertaken by suitably trained botanical surveyors holding BSBI Field Identification Skills Certificates - Level 4 or above.

2 Limitations

There were no limitations to the survey.

3 Results

Table A6.1 and Figure A6.1 below details the results of the hedgerow survey. Two of the 30 hedgerow lengths surveyed were assessed as being 'ecologically important'. These were hedgerows 6 and 7; refer to Figure A6.1 for locations.

4 References

Defra (2007) *Hedgerow Survey Handbook - a standard procedure for local surveys in the UK*. Defra, London.

Table A6.1 Hedgerow survey results

Hedgerow number (refer to Hedgerow survey plan)	Length (m approx.)	Presence of protected/notable species	Parallel to right of way	Gaps <10% hedgerow length	Parallel to hedgerow within 15m	Wall/bank over half length of hedgerow	Ditch over half length of hedgerow	Total points for connections	At least one standard tree per 50m length	Woody species	Average number of woody species in 30m length	Woodland indicator species	Number of woodland indicator species	Important
H1	195	No	No	Yes	No	Yes	Yes	2	No	Blackthorn, hawthorn, oak, ash, field maple, elm, elder, hazel	4	Lords and ladies	1	No
H2	145	No	No	Yes	No	No	Yes	2	No	Hawthorn, blackthorn, grey willow, elder, field maple, dog rose, osier	3.5	Lords and ladies, dog's mercury.	2	No
H3	70	No	No	Yes	No	No	Yes	4	No	Field maple, dogwood, hawthorn, blackthorn, elder	4	Lords and ladies	1	No
H4	110	No	No	Yes	No	Yes	Yes	4	No	Elm, blackthorn, hawthorn, field maple, elder, ash	3.5		0	No
H5	115	No	No	Yes	No	Yes	Yes	4	No	Hawthorn, elm, field maple, oak, elder	4.5	Lords and ladies	1	No
H6	195	No	Yes	Yes	No	Yes	Yes	4	Yes	Blackthorn, hawthorn, dogwood, oak, elm, hazel, elder, field maple	5	Lords and ladies	1	Yes
H7	150	No	Yes	Yes	No	No	No	4	Yes	Blackthorn, oak, elder, hawthorn, hazel, grey willow, dog rose, guelder rose	6		0	Yes
H8	65	No	No	Yes	No	Yes	No	5	No	Blackthorn, hawthorn, hazel, elder, elm	3	Lords and ladies, English bluebell	2	No
H9	125	No	No	Yes	No	No	No	4	No	Blackthorn, oak, holly, hawthorn, ash, dog rose, elder	3		0	No
H10	40	No	No	Yes	No	Yes	No	4	No	Hawthorn, blackthorn, elm	3	Lords and ladies	1	No
H11	230	No	No	Yes	No	No	No	4	No	Blackthorn, elm, hawthorn, holly	3	Lords and ladies	1	No
H12	95	No	No	Yes	Yes	No	No	2	No	Blackthorn, hawthorn	1.5		0	No
H13	135	No	No	Yes	No	Yes	No	3	No	Hazel, hawthorn, blackthorn, dog rose, elder	3	Lords and ladies, English bluebell	2	No

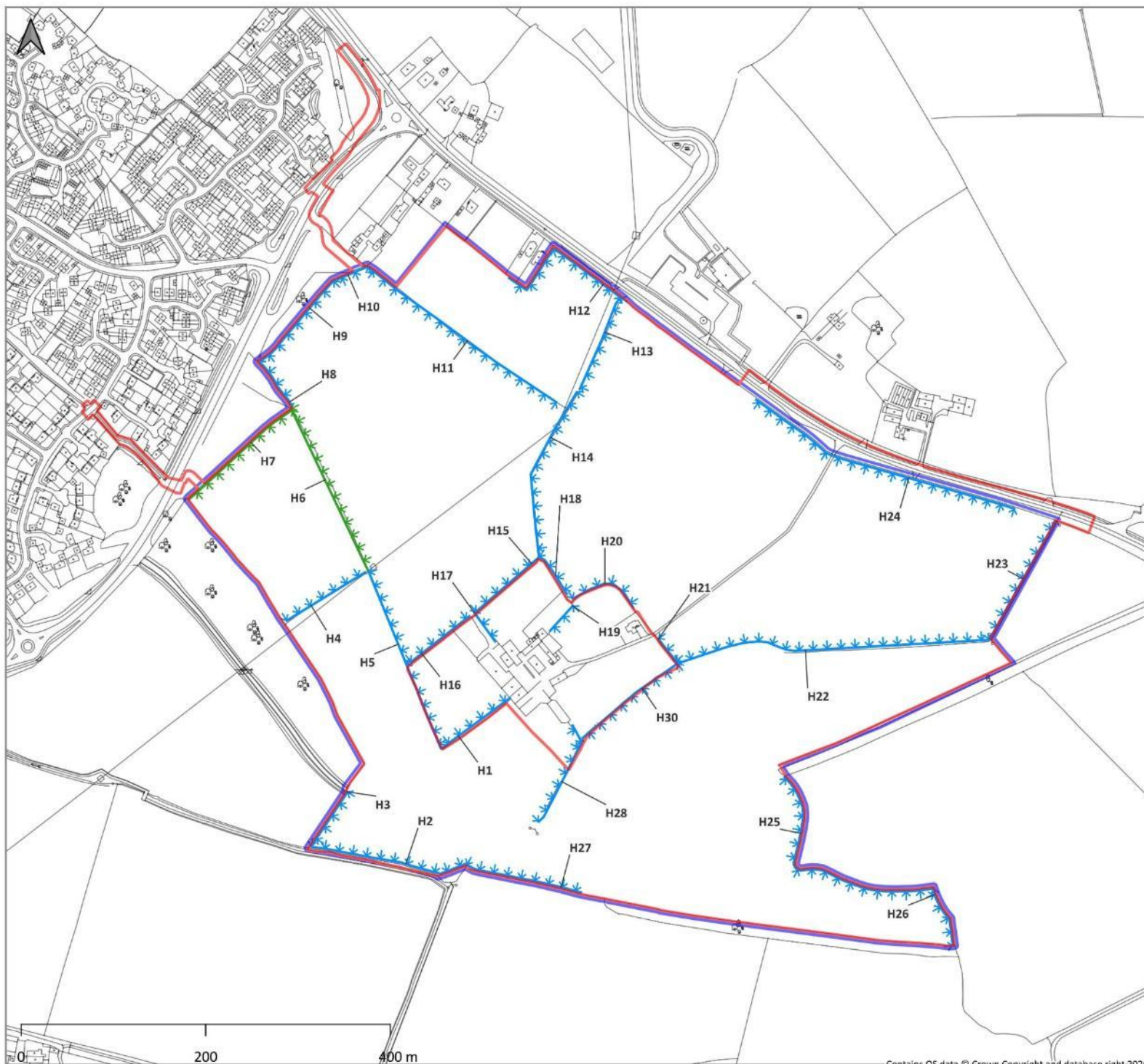
Table A6.1 Hedgerow survey results

Hedgerow number (refer to Hedgerow survey plan)	Length (m approx.)	Presence of protected/notable species	Parallel to right of way	Gaps <10% hedgerow length	Parallel to hedgerow within 15m	Wall/bank over half length of hedgerow	Ditch over half length of hedgerow	Total points for connections	At least one standard tree per 50m length	Woody species	Average number of woody species in 30m length	Woodland indicator species	Number of woodland indicator species	Important
H14	85	No	No	Yes	No	Yes	No	4	No	Elder, hawthorn, blackthorn, hazel, oak, dog rose, ash	3.5	Lords and ladies	1	No
H15	95	No	No	Yes	No	Yes	Yes	4	No	Blackthorn, hawthorn, oak, elm, elder	3		0	No
H16	90	No	No	Yes	No	Yes	Yes	4	No	Blackthorn, hawthorn, elder, elm	3	Lords and ladies	1	No
H17	40	No	No	Yes	No	Yes	No	2	No	Blackthorn, elm, hawthorn	3		0	No
H18	55	No	No	Yes	No	No	No	4	No	Hazel, hawthorn, blackthorn	2	Lords and ladies	1	No
H19	40	No	No	Yes	No	No	Yes	2	No	Hawthorn, blackthorn	2	Lords and ladies, English bluebell	2	No
H20	90	No	No	Yes	No	No	Yes	2	No	Hawthorn, blackthorn, elm	2	Lords and ladies	1	No
H21	40	No	No	Yes	No	No	No	2	No	Oak, hawthorn, elm, blackthorn	3	Lords and ladies	1	No
H22	340	No	No	Yes	No	Yes	Yes	3	Yes	Elm, hawthorn, oak, blackthorn, field maple, spindle, holly, dog rose	4	Lords and ladies	1	No
H23	150	No	No	Yes	No	No	Yes	2	No	Hawthorn, blackthorn	2		0	No
H24	360	No	No	Yes	No	No	Yes	1	No	Hawthorn, blackthorn, elder, spindle, wild privet, dog rose, grey willow	3	Lords and ladies, false brome	2	No
H25	270	No	No	Yes	No	No	Yes	3	Yes	Hawthorn, blackthorn, elder, ash, oak, field maple, dog rose	2.5	Lords and ladies	1	No

Table A6.1 Hedgerow survey results

Hedgerow number (refer to Hedgerow survey plan)	Length (m approx.)	Presence of protected/notable species	Parallel to right of way	Gaps <10% hedgerow length	Parallel to hedgerow within 15m	Wall/bank over half length of hedgerow	Ditch over half length of hedgerow	Total points for connections	At least one standard tree per 50m length	Woody species	Average number of woody species in 30m length	Woodland indicator species	Number of woodland indicator species	Important
H26	75	No	No	Yes	No	No	Yes	3	Yes	Hawthorn, blackthorn, field maple, osier, ash, grey willow	4		0	No
H27	150	No	No	Yes	No	No	No	3	No	Dogwood, elm, hawthorn, blackthorn, elder	3	Lords and ladies	1	No
H28	105	No	No	Yes	No	No	Yes	2	No	Elm, hawthorn, blackthorn	2		0	No
H29	30	No	No	No	No	Yes	No	2	No	Elm, blackthorn	2		0	No
H30	130	No	No	Yes	No	Yes	Yes	4	No	Elder, field maple, hawthorn, blackthorn, elm	3		0	No

Figure A6.1: Hedgerow Survey Plan



Key

- Site boundary
- Survey boundary
- Hedgerow 'Important' under the hedgerow regulations
- Hedgerow 'not' important under the hedgerow regulations



Gleeson Land		
Forest Farm, Chippenham		
Hedgerow Survey Plan		
25/06/2026	Created by: EG	Scale at A3 1:4,000

Appendix 7: Great Crested Newt Survey

Great crested newt survey

1 Methodology

Pond search

Ordnance survey mapping (1:25000) and aerial photography were used to search for ponds within 250m from the Survey Area boundary, in line with Natural England guidance (English Nature, 2001; refer to Figure A7.1) and taking into account the results of English Nature Research Report 576 (English Nature, 2004).

The waterbody located within the Survey Area (adjacent to the farm complex; Figure 3, TN1) was excluded from survey as its construction and use as a slurry pit was considered to render it of negligible value to amphibians. Wet ditches within the Survey Area were also considered to be unsuitable as they were dry for the majority of the amphibian breeding season, with only shallow water present during the winter months.

Eight ponds were identified within 250m of the Site boundary; refer to Great Crested Newt Survey Plan. Survey access was sought via post and telephone for all of the offsite ponds in spring 2022; access permission was secured for all but Ponds 4 and 8. During the update survey undertaken in 2024, survey access was again sought via post and telephone and was secured for all eight of the offsite ponds.

Habitat Suitability Index assessments

Habitat Suitability Index (HSI) assessments of onsite Ponds 1, 2, 3, 5, 6 and 7 were undertaken on 17 May 2022. HSI assessments of Ponds 4 and 8 were undertaken on 17 April 2024, and update HSI assessments were also undertaken of Ponds 1, 2, 3, 5, 6 and 7 on this date; refer to Table A7.1 for HSI assessment scores.

The HSI assessment was based on the scoring system developed by Oldham *et al* (2000); this incorporates ten suitability factors and scores them on a numerical index; zero indicates unsuitable, 1 indicates optimal.

eDNA survey

eDNA surveys were undertaken on 17 May 2024 of Ponds 1, 2, 3, 5, 6, 7 and 8; refer to Table A7.2 for results. Pond 4 was found to be dry on this date and was consequently not suitable for eDNA water sampling. The ponds were sampled in accordance with the methods outlined in the technical report that accompanies Defra’s research project into eDNA (Biggs *et al*, 2014). Water sampling was undertaken by a Natural England Great Crested Newt Survey Licence holder. Samples were subsequently analysed by NatureMetrics using quantitative polymerase chain-reaction testing.

Limitations

Access for survey was not possible to Ponds 4 and 8 in 2022, however, as access was agreed in 2024 to all ponds, this is not considered a significant limitation.

2 Results

Habitat Suitability Index assessments

Table A7.1 Great crested newt HSI results

Pond Number	2022		2024	
	HSI Score	Suitability	HSI Score	Suitability
Pond 1	0.79	Good	0.55	Below average
Pond 2	0.55	Good	0.39	Poor
Pond 3	0.33	Poor	0.35	Poor

Table A7.1 Great crested newt HSI results

Pond Number	2022		2024	
	HSI Score	Suitability	HSI Score	Suitability
Pond 4	No access		Pond dry	
Pond 5	0.53	Below average	0.48	Poor
Pond 6	0.74	Good	0.64	Average
Pond 7	0.70	Good	0.45	Poor
Pond 8	No access		0.39	Poor

eDNA survey

The survey of Pond 1 was positive for the presence of great crested newt eDNA. The eDNA surveys of Ponds 2, 3, 5, 6, 7, and 8 were negative, indicating that the species is absent from these ponds.

Table A7.2 Great crested newt eDNA results

Pond Number	Result
Pond 1	Positive
Pond 2	Negative
Pond 3	Negative
Pond 4	Pond dry; eDNA sampling not possible.
Pond 5	Negative
Pond 6	Negative
Pond 7	Negative
Pond 8	Negative

3 References

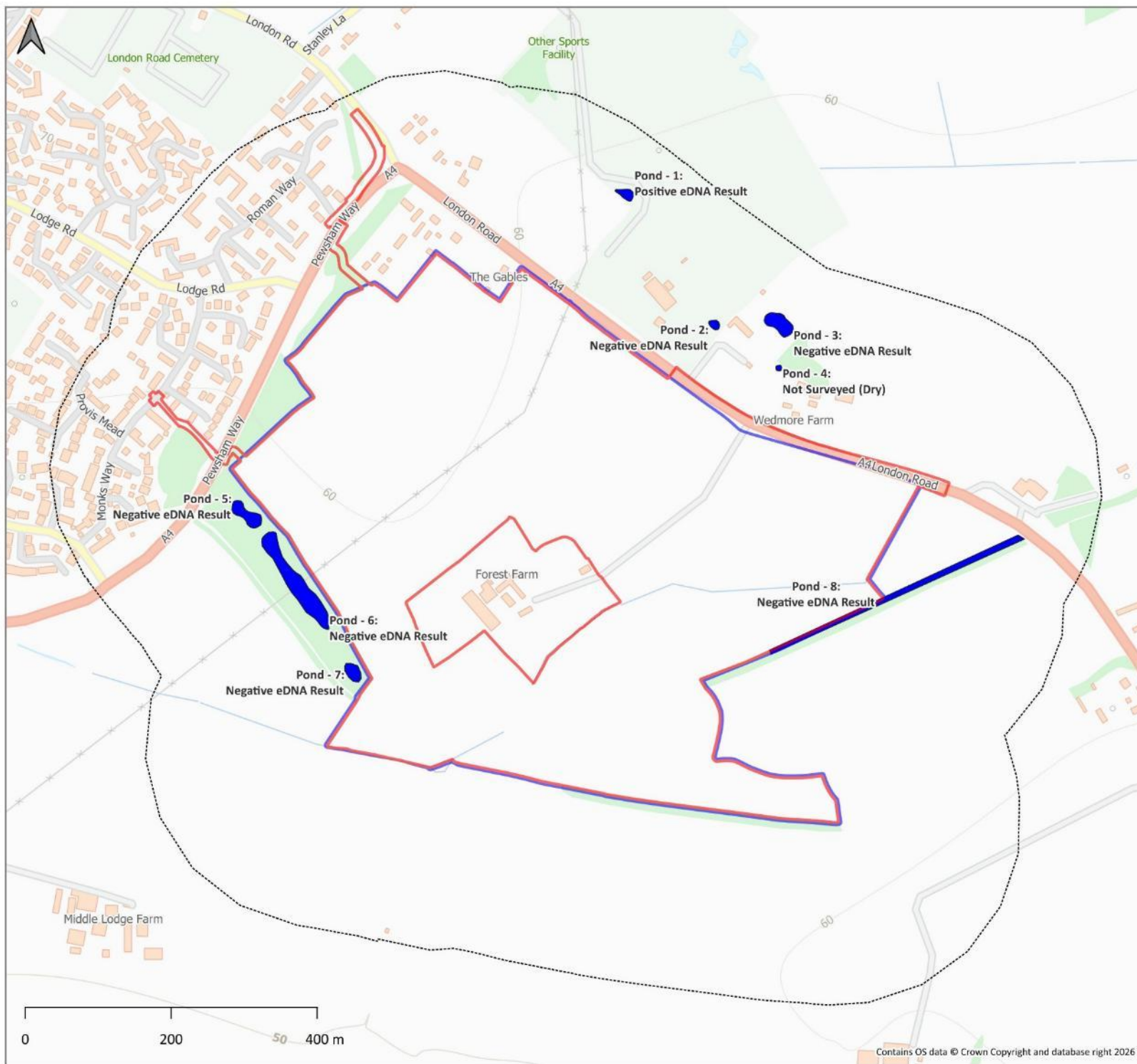
Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F (2014) Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature.

English Nature (2004) Species Conservation Handbook. English Nature, Peterborough.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10(4), 143-155.

Figure A7.1: Great Crested Newt Survey Plan



Appendix 8: Reptile Survey

Reptile survey

1 Methodology

A reptile survey was undertaken between April and June 2022 according to standard methodology (English Nature 1994; Froglife 1999). A total of 310 artificial refuges (0.5m x 0.5m roofing felt tiles) were deployed on 12 April 2022 to sample all areas of suitable habitat within the initial survey boundary; refer to Figure A8.1. The refugia were subsequently checked for reptiles in appropriate weather conditions on seven occasions between 21 April and 28 June 2022 (refer to Table A8.1).

2 Limitations

There were no limitations to the survey.

3 Results

Refer to Tables A8.1 for survey results. A 'low' population of grass snakes was recorded.

Table A8.1 Reptile survey results; initial survey boundary

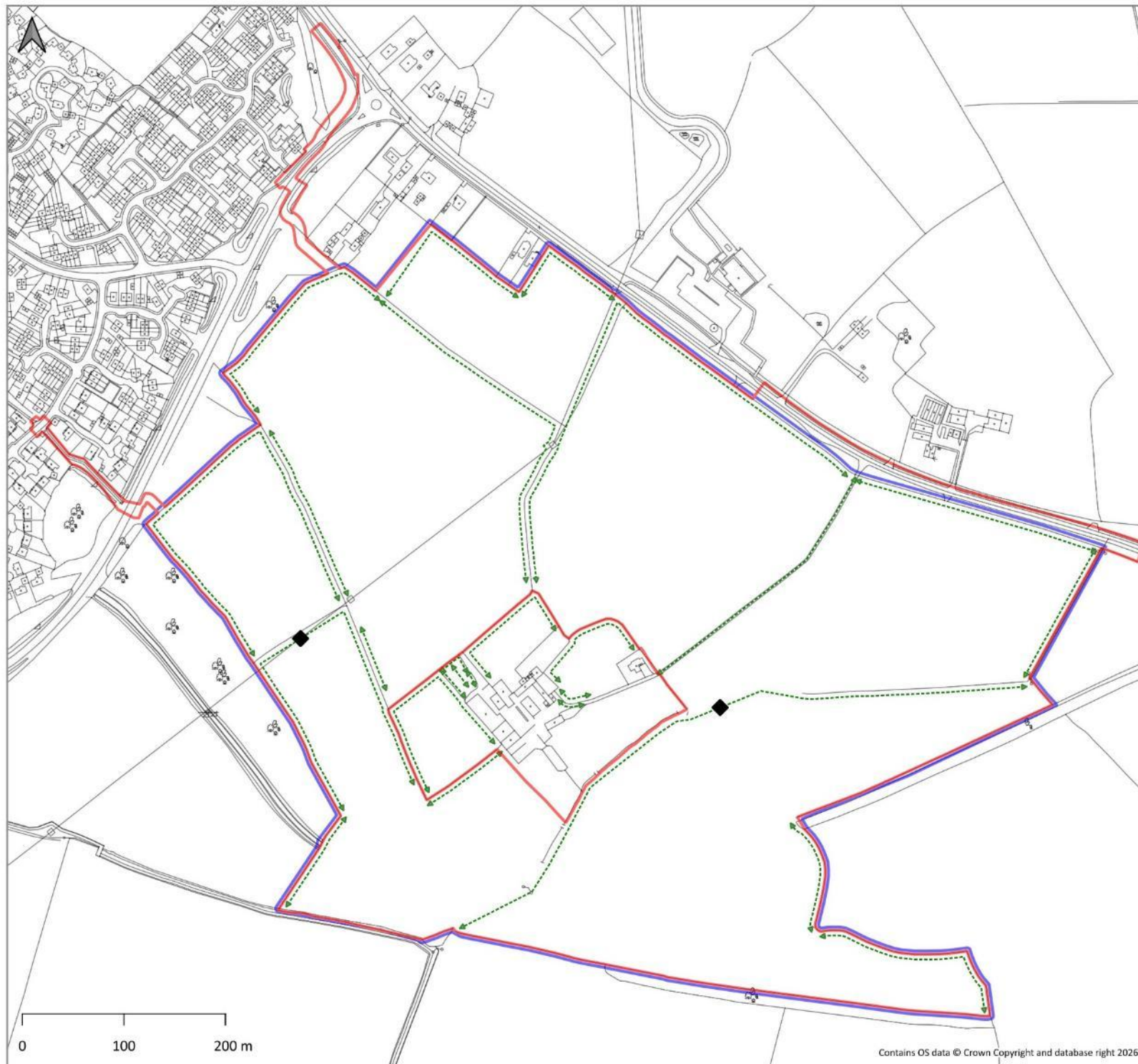
Visit	Date	Start Time	Weather			Results
			Temperature (°C)	Cloud Cover (Octas)	Wind Force (Beaufort)	
1	21/04/22	10:00	13	1	2	No reptiles
2	26/04/22	09:45	10	0	1	No reptiles
3	04/05/22	09:00	13	7	2	No reptiles
4	10/05/22	09:20	14	8	1	No reptiles
5	19/05/22	16:40	18	6	0-1	Two grass snakes (one adult, one juvenile)
6	15/06/22	9:00	16	1	1	No reptiles
7	17/06/22	06:00	16	1	1	No reptiles

4 References

English Nature, (1994). *Species Conservation Handbook*. JNCC, Peterborough.

Froglife (1999). *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.

Figure A8.1: Reptile Survey Plan



Key

- ▬ Site boundary
- ▬ Survey boundary
- - - - - Reptile felt location
- ◆ Grass snake location

Appendix 9: Breeding Bird Survey

Breeding bird survey

1 Methodology

A breeding bird survey was undertaken based on an adapted Common Bird Census (CBC) methodology (Gilbert et al 1998) and in accordance with the Bird Survey Guidelines (Bird Survey & Assessment Steering Group, 2024). The survey took place during 2022 (i.e., before the release of the Bird Survey Guidelines), however survey effort (three survey visits) was consistent with current EAD Ecology interpretation of the Bird Survey Guidelines, based on factors including suitability of onsite habitats related to relevant designated sites, presence of onsite habitats of high value for breeding birds and size of the Site. The three survey visits were carried out between April and June by two experienced ornithologists, following a transect route that allowed full coverage of the Survey Area. Visits were made during the morning, in suitable weather conditions (avoiding rain and strong winds); refer to Table A9.1. The locations of all birds seen and/ or heard during each visit were mapped and any breeding-related behaviour was recorded (e.g. singing, displaying or carrying food). Data from the three visits were analysed to produce an estimate of the number of breeding pairs or territories within the Survey Area.

2 Limitations

There were no limitations to the survey.

3 Results

Survey dates, times and weather conditions are presented in Table A9.1.

Table A9.1 Survey conditions

Visit	Date	Time	Weather at start
1	08/04/2022	07:45 – 09:45	Temp – 3°C. Cloud 8/8. Wind 0-1.
2	04/05/2022	07:15 – 09:00	Temp – 11°C. Cloud 8/8. Wind 1-2.
3	15/06/2022	07:30 – 09:30	Temp – 14°C. Cloud 0/8. Wind 0-1.

Table A9.1 provides a summary of the survey results and categorises each species' breeding status within the Survey Area based on the BTO's categories of breeding evidence:

- Confirmed breeding (e.g. recently fledged young, adult carrying food to nest);
- Probable breeding (e.g. permanent territory, courtship display);
- Possible breeding; (e.g. singing male in suitable nesting habitat); or
- Non-breeding (e.g. flying over only).

Figure A9.1 identifies the locations of key species recorded during the surveys; the original survey plans are available on request. Where possible, an estimate of the number of breeding pairs/ territories within the Survey Area was made.

A total of 49 species were recorded within the Survey Area, of which 40 were confirmed, probably or possibly breeding. These included:

- Red kite, which probably bred within the woodland located immediately adjacent to the Survey Area boundary. This species is protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).
- House sparrow, which was confirmed breeding, skylark and yellowhammer, which probably bred, and starling, which possibly bred. These are Red-listed Priority Species.
- Bullfinch, which was confirmed breeding, and dunnock and song thrush, which probably bred. These are Amber-listed Priority Species.
- Greenfinch, which probably bred. This is a Red-listed species.

- Rook, confirmed to be breeding, woodpigeon and wren, which probably bred, and kestrel, moorhen, sparrowhawk, whitethroat and stock dove, which possibly bred. These are Amber listed species.

Grasshopper warbler, herring gull, lesser black-backed gull, little egret, mallard and meadow pipit, which are all either Red-listed, Amber-listed, Priority Species and/or listed under Annex 1 of the Birds Directive; however, none of these species were considered to be breeding within the Survey Area.

Detailed survey results are provided in Table A9.2 below. Confirmed, possible and probable breeding records for notable bird species (i.e. legally protected species, Priority Species and Red and Amber-listed Birds of Conservation Concern) are shown in Figure A9.1.

4 References

Bird Survey & Assessment Steering Group. (2024). *Bird Survey Guidelines for assessing ecological impacts*; <https://birdsurveyguidelines.org> Accessed: 17/10/2024

Gilbert G, Gibbons DW, Evans J (1998) *Bird Monitoring Methods*. RSPB, Sandy, Bedfordshire

Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*. *British Birds* 114: 723-747.

Table A9.2: Breeding bird survey results

Common name	BTO species code	Legal & Conservation Status ¹²	Date & no. recorded			Breeding status				Notes
			08 April 2022	04 May 2022	15 June 2022	Confirmed	Probable	Possible	Non-breeding	
Blackbird	B.		4	5	1		✓			3-5 pairs. Singing males in suitable breeding habitat recorded.
Blackcap	BC		3	3	8		✓			3-4 pairs. Singing males in suitable breeding habitat recorded.
Blue tit	BT		18	15	17	✓				8-12 pairs. Recently fledged juveniles recorded in suitable breeding habitat.
Bullfinch	BF	Priority, Amber		1	2	✓				0-1 pair. Adults carrying food for young in suitable breeding habitat (hedgerows) recorded.
Buzzard	BZ		2	1	4			✓		0-1 pair. Adults recorded in suitable breeding habitat (mature trees).
Canada goose	CG		3		12				✓	Recorded flying over the Survey Area only.
Carrion crow	C		19	9	15	✓				1-3 pairs. Adults carrying food for young and recently fledged juveniles recorded.
Chaffinch	CH		3	2	2			✓		2-3 pairs. Adult males singing in suitable breeding habitat recorded.
Chiffchaff	CC		9	8	8		✓			5-8 pairs. Adult males singing in suitable breeding habitat recorded.
Coat tit	CT		2					✓		0-1 pair. Adult male singing in suitable breeding habitat recorded during April visit only.
Collared dove	CD		1	3				✓		0-1 pair. Adults in suitable breeding habitat recorded.
Dunnock	D	Priority, Amber	12	11	6		✓			10-12 pairs. Singing males in suitable breeding habitat (dense scrub and hedgerows) recorded.
Goldcrest	GC				1			✓		0-1 pair. Adult male singing in suitable breeding habitat recorded.
Goldfinch	GO.		12	4	2		✓			2-4 pairs. Singing males in suitable breeding habitat recorded.
Grasshopper warbler	GH	Priority, Red	1						✓	Individual male recorded singing within Survey Area during its migration. Habitat within Survey Area not suitable for breeding.
Great spotted woodpecker	GS		4	2	2		✓			0-1 pair. Adults in suitable breeding habitat recorded.
Great tit	GT		9	4	8	✓				3-6 pairs. Recently fledged juveniles in suitable breeding habitat recorded.
Greenfinch	GR	Red		2			✓			0-1 pair. Adults visiting probable nest in suitable breeding habitat (hedgerow) recorded.
Green woodpecker	G.		1		1				✓	Recorded foraging within Survey Area only.

¹² Standard protection and Green/unlisted (Stanbury et al 2021) unless stated

Table A9.2: Breeding bird survey results

Common name	BTO species code	Legal & Conservation Status ¹²	Date & no. recorded			Breeding status				Notes
			08 April 2022	04 May 2022	15 June 2022	Confirmed	Probable	Possible	Non-breeding	
Herring gull	HG	Priority, Red	14	4	23				✓	Recorded flying over the Survey Area only.
House sparrow	HS	Priority, Red	12	14	24	✓				4-7 pairs. Adults carrying nesting material and recently fledged juveniles in suitable breeding habitat (farm buildings in the centre of the Survey Area) recorded.
Jackdaw	JD		6	2	5			✓		0-1 pair. Adult carrying food recorded, however, breeding most likely occurred in nearby residential buildings offsite. Mature trees and buildings with potential nesting cavities provided possible breeding habitat within the Survey Area.
Jay	J		1	1				✓		0-1 pair. Adult in suitable breeding habitat recorded.
Kestrel	K.	Amber		1	2			✓		0-1 pair. Adults in suitable breeding habitat (mature trees with potential nesting cavities) recorded.
Lesser black-backed gull	LB	Amber	5	1	7				✓	Recorded flying over the Survey Area only.
Little egret	ET	Annex 1	1						✓	Recorded flying over the Survey Area only.
Little owl	LO		1					✓		Single individual recorded during April visit only on roof of farm house in centre of the Survey Area (potential suitable breeding habitat). No further sightings of this species were made during subsequent survey visits.
Long-tailed tit	LT		1	1	5			✓		0-2 pairs. Adults in suitable breeding habitat recorded.
Magpie	MG		4	3	15	✓				1-2 pairs. Recently fledged juveniles in suitable breeding habitat recorded.
Mallard	MA	Amber	2	2	2				✓	Recorded flying over the Survey Area only.
Meadow pipit	MP	Amber	1						✓	Recorded flying over the Survey Area only.
Moorhen	MH	Amber	2					✓		0-1 pair. Adults in suitable breeding habitat recorded in the south-east of the Survey Area (wet ditch) and adjacent to the western boundary of the Survey Area (pond).
Nuthatch	NH				1			✓		0-1 pair. Adult in suitable breeding habitat recorded.
Pheasant	PH		1	1	2			✓		0-1 pair. Adults in suitable breeding habitat recorded.
Pied wagtail	PW		1	3	2			✓		0-1 pair. Adults in suitable breeding habitat (farmyard buildings) recorded.
Raven	RN			2					✓	Recorded flying over the Survey Area only.

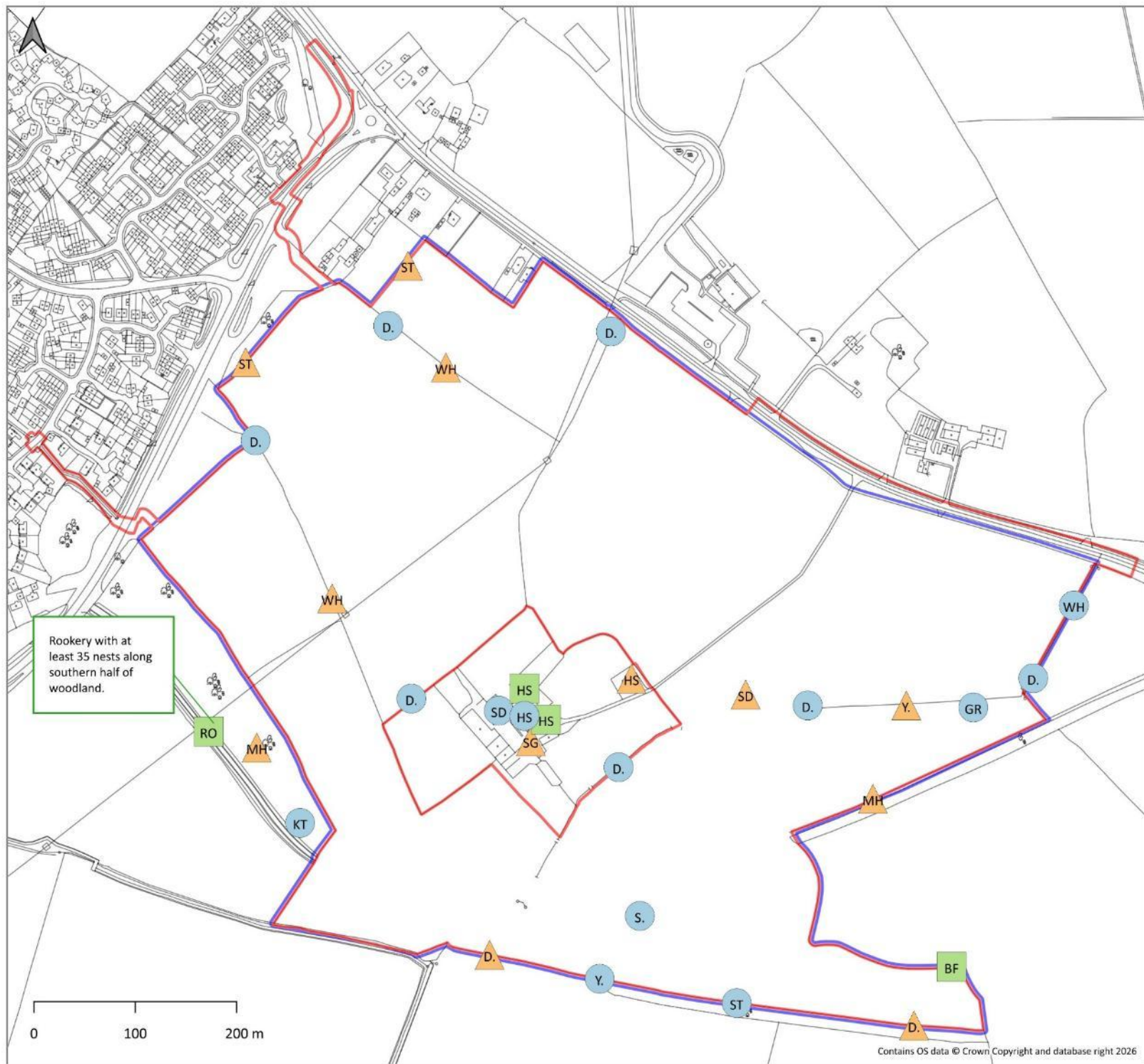
Table A9.2: Breeding bird survey results

Common name	BTO species code	Legal & Conservation Status ¹²	Date & no. recorded			Breeding status				Notes
			08 April 2022	04 May 2022	15 June 2022	Confirmed	Probable	Possible	Non-breeding	
Red kite	KT	Schedule 1, Annex 1			6		✓			0-1 pair. Pair recorded undertaking courtship display over woodland immediately adjacent to the western Survey Area boundary. They were also seen to repeatedly land in trees within the woodland suggesting potential presence of a nesting site.
Robin	R		14	13	6	✓				8-14 pairs. Recently fledged juvenile in suitable breeding habitat recorded.
Rook	RO	Amber	29	46	1	✓				50-70 pairs. Rookery located in woodland immediately adjacent to the western Survey Area boundary. 35 nests were counted on the April survey visit before new growth of leaves obstructed view.
Skylark	S	Priority, Red	1	1	1		✓			0-1 pair. Adult male recorded singing over field in the south of the Survey Area on each survey visit. Habitat here (agriculturally improved and managed poor semi-improved grassland) had low breeding suitability for this species.
Song thrush	ST	Priority, Amber	9	2	2		✓			2-4 pairs. Adult males singing in suitable breeding habitat (thick hedgerows, dense scrub and woodland) recorded.
Sparrowhawk	SH	Amber	2					✓		0-1 pair. Adults in suitable breeding habitat (woodland) recorded.
Starling	SG	Priority, Red			1			✓		0-1 pair. Adult carrying food recorded, however, breeding most likely occurred in nearby residential buildings offsite. Mature trees and buildings with potential nesting cavities provided possible breeding habitat onsite.
Stock dove	SD	Amber	4	2	1			✓		1-2 pairs. Adults in suitable breeding habitat (mature trees and buildings with potential nesting locations) recorded.
Swallow	SL			13	11	✓				1-2 pair. At least one nest recorded in barns within the farm complex in the centre of the Survey Area.
Whitethroat	WH	Amber		1	3			✓		0-1 pair. Adult males singing in suitable breeding habitat (hedgerows and dense scrub) recorded.
Woodpigeon	WP	Amber	28	15	14		✓			10-15 pairs. Adult males singing in suitable breeding habitat (hedgerows and woodland) recorded.
Wren	WR	Amber	16	16	18		✓			12-18 pairs. Adult males singing in suitable breeding habitat (hedgerows, scrub and woodland) recorded.

Table A9.2: Breeding bird survey results

Common name	BTO species code	Legal & Conservation Status ¹²	Date & no. recorded			Breeding status				Notes
			08 April 2022	04 May 2022	15 June 2022	Confirmed	Probable	Possible	Non-breeding	
Yellowhammer	Y	Priority, Red	4	3	1		✓			1-2 pairs. Adult males recorded singing in suitable habitat (hedgerows) recorded. Behaviour suggested that adults were visiting a probable nest within a hedgerow in the south of the Survey Area.

Figure A9.1: Breeding Bird Survey Plan



Key

- Site boundary
- Survey boundary

- BF Bulfinch
- D. Dunnock
- S. Skylark
- GR Greenfinch
- HS House Sparrow
- MH Moorhen
- KT Red Kite
- RO Rook
- ST Song Thrush
- SG Starling
- SD Stock Dove
- WH Whitethroat
- Y. Yellowhammer

- Confirmed breeding
- Probable breeding
- Possible breeding

Appendix 10: Hazel Dormouse Survey

Dormouse survey results

1 Methodology

Hazel dormouse nest- tube surveys were undertaken following standard methodology (Bright *et al.* 2006) and under a Natural England Dormouse Survey Licence. 194 dormouse nesting tubes were installed within hedgerows within the Survey Area on 07 April 2022; refer to Figure A10.1. Monthly dormouse surveys were completed from May to October 2022; refer to Table A10.1 for survey dates. An index score of 85 was achieved; the suggested minimum score for adequate survey effort is 20 (Chanin & Woods 2003).

2 Limitations

There were no limitations to the survey.

3 Results

No signs of hazel dormice were recorded during the nest tube surveys; refer to Table A10.1. Refer to the Dormouse Plan for the location of dormouse nesting tubes.

Table A10.1. Dormouse Survey Results

Date	Results
10/05/22	No evidence of dormice.
15/06/22	No evidence of dormice.
19/07/22	No evidence of dormice.
17/08/22	No evidence of dormice.
13/09/22	No evidence of dormice.
19/10/22	No evidence of dormice.

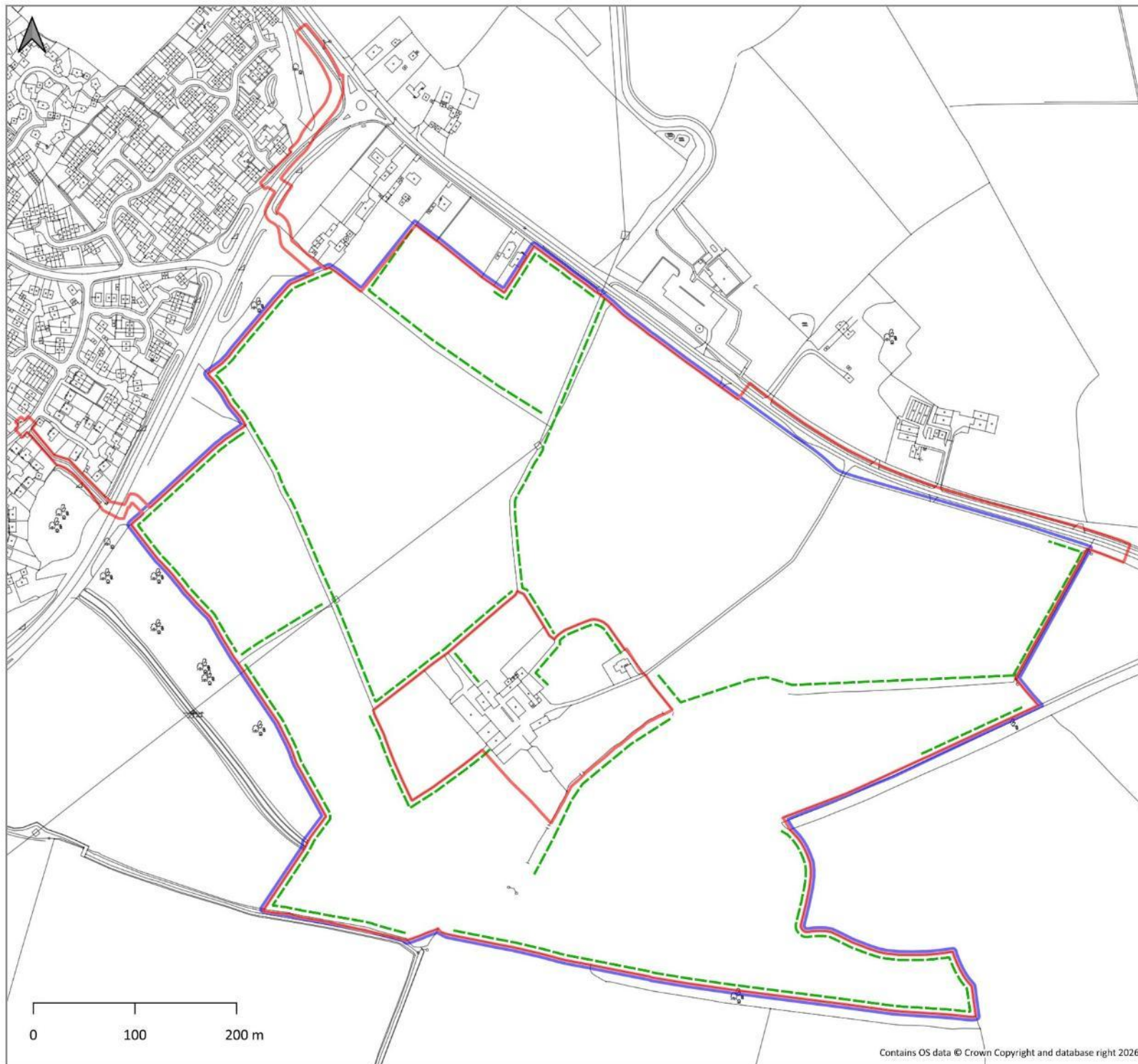
4 References

Bright, P., Morris, P and Mitchell-Jones, T (2006). *The Dormouse Conservation Handbook 2nd edition*. English Nature, Peterborough.

Chanin, P & Woods, M (2003). *Surveying dormice using nest tubes. Results and experiences from the South West Dormouse Project*. English Nature Research Report No. 5.

English Nature (2004) *Species Conservation Handbook*. English Nature, Peterborough

Figure A10.1: Hazel Dormouse Survey Plan



Key

- Site boundary
- Survey boundary
- Dormouse tube location

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ead ecology www.eadecology.co.uk	Gleeson Land		
	Forest Farm, Chippenham		
	Hazel Dormouse Survey Plan		
	25/06/2026	Created by: EG	Scale at A3 1:3,600

Appendix 11: Badger Survey

Badger survey

1 Methodology

A badger survey was undertaken in accordance with the Mammal Society publication 'Surveying Badgers' (Harris et al. 1989). A search for badger setts and other signs of badger activity (e.g. hairs, pathways, latrines, foraging signs) was carried out on 08 April 2022 and updated on 18 April 2024. All areas of the Survey Area were surveyed, in addition to a 30m buffer around the boundary where access was possible.

2 Limitations

There were no limitations to the survey.

3 Results

Two active outlier badger setts were recorded within the Survey Area (refer to Figure A11.1 for locations):

- Outlier sett 1; located in the centre of the Survey Area, comprised one active entrance and one disused entrance.
- Outlier sett 2; located in the northwest of the Survey Area, comprised two active entrance holes.

One further disused single entrance outlier sett was located in the centre of the Survey Area, to the west of the central farm building complex.

A further three active main badger setts and one annexe sett were also recorded immediately adjacent to, but outside of, the south-eastern and south-western Site boundaries (refer to Figure A11.1 for locations):

- Main sett 1; located on the far side of the ditch along the south-eastern Site boundary, comprised at least 22 active entrance holes.
- Main sett 2; located on the far side of the ditch along the south-eastern Site boundary, comprised at least 23 active entrance holes.
- Annex sett 1; located approximately 20m north of Main sett 2, comprised five active entrance holes.
- Main sett 3; located within woodland approximately 15m from the southwestern Site boundary, comprised 13 active entrance holes and 11 disused holes.

Badger tracks, hairs, prints and latrines were recorded throughout the Survey Area indicating that badgers were using all habitats within the Survey Area.

4 References

Harris, S, Cresswell P & Jeffries D (1989) *Surveying Badgers*. The Mammal Society, London

Figure A11.1: Badger Survey Plan

Appendix 12: Bat Activity Survey

Bat activity surveys

1 Methodology

The bat activity survey was undertaken in accordance to BCT guidelines at the time of the survey (Collins [ed.] 2016). The survey comprised two elements: transect survey and static detector survey; refer to Figure A12.1 for transect routes and static detector locations.

Transect survey

Bat activity transect surveys were undertaken to determine the use of the Survey Area by bats by identifying the species present, commuting routes and foraging areas. In accordance with the BCT guidelines (Collins [ed.] 2016), the Survey Area was subject to two hour transect surveys over seven separate evenings, with one survey per month between April and October 2022 (inclusive).

The Survey Area was divided across four transect routes based on preliminary identification of habitat features through Extended Phase 1 Habitat survey; refer to Figure A12.1. On each survey, the four predetermined transect routes were walked at a constant pace by separate surveyors. Surveys began at sunset and continued for at least two hours. In order to facilitate the production of a kernel density estimate plot of bat activity along the transects, the start point of each transect was randomised between surveys.

Surveyors carried an Anabat Express (Titley Electronics Ltd) bat detector with an omni-directional microphone (Batbox Duet Frequency Division detectors were carried to assist audible determination of bat registrations) or an Echometer (Wildlife Acoustics Ltd) frequency division/real time expansion bat detector in order to record and GPS tag registrations for subsequent analysis.

Key observations of bats such as flight direction, flight height, number of bats and behaviour (e.g. characteristic foraging or commuting) were recorded where relevant. Determination of transect routes and all surveys were carried out by suitably qualified and experienced ecologists. All surveys were undertaken in suitable weather conditions; refer to Table A12.5.

Static detector survey

In accordance with BCT guidelines, stratified sampling of the Survey Area using static bat detectors was undertaken between April and October 2022 (inclusive). Eight static bat detectors (Anabat Express) were deployed on pre-determined habitat features considered likely to be of value for bats for a minimum of five nights per month, refer to Table A12.1 and Figure A12.1. Detectors were set to record from 30 minutes prior to sunset to 30 minutes post-sunrise.

Table A12.1 Static Detector Survey details; refer to Figure A12.1 for locations.

Static Location	Static Detector location	Survey periods (2022)	Total number of nights
1	South-western hedgerow. Detector attached to a fence, with microphone facing north east (improved grassland).	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06 19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	35

Table A12.1 Static Detector Survey details; refer to Figure A12.1 for locations.

Static Location	Static Detector location	Survey periods (2022)	Total number of nights
2	South-west of farm buildings. Detector attached to oak, with microphone facing north-west (improved grassland)	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06 19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	35
3	Hedgerow along the southern boundary with microphone facing north (improved grassland).	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06 19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	35
4	Hedgerow in the eastern side of the Survey Area on a fence post with microphone facing south (improved grassland).	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06 19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	35
5	Hedgerow along the north-eastern boundary with microphone facing south (improved grassland).	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06 19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	35
6	North of farm buildings on fence post with microphone facing north-east (improved grassland).	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06 19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	35
7	Hedgerow in north-western side of Survey Area with microphone facing north (improved grassland).	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06 19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	35
8	Hedgerow along the western boundary with microphone facing south-east (improved grassland).	21/04 – 25/04 10/05 – 14/05 15/06 – 19/06	35

Table A12.1 Static Detector Survey details; refer to Figure A12.1 for locations.

Static Location	Static Detector location	Survey periods (2022)	Total number of nights
		19/07 – 23/07 17/08 – 21/08 15/09 – 19/09 09/10 – 13/10	

2 Limitations

There were no limitations to surveys that are considered to affect the reliability of the impact assessment conditions. A minor limitation is that the transect surveys undertaken on 11 April 2022 were undertaken in temperatures <10°C towards the end of the surveys. This is not a significant constraint on the survey, survey results or the evaluation of the Site for bats.

3 Analysis

General

All bat detector data were downloaded and analysed using ‘Anabat Insight v2.0.1’ (Titley Electronics). For both the transect and static detector surveys, bat registrations for each species were defined as a series of pulses within a single Anabat Insight Zero Crossing (ZC) file. Whilst this results in files of different length, consideration of a file as a single registration provides a consistent measure of relative activity for each species and total bat activity, to enable comparison across the dataset (i.e. between static detector locations).

Transect survey

The geotagged bat registrations recorded during the transect surveys were processed, using the kde2d function from the MASS package (Venables & Ripley 2002) in R version 3.6.2, to produce a kernel density estimate plot of bat activity along the transect route. The kernel density plot enables a visual comparison of the estimated relative density of bat registrations via a colour gradient. The parameters of the kernel density estimate plots will be selected to best represent the data visually. The ‘heat map’ is therefore subjective and provides a visual aid to the assessment. Note that the density of bat registrations is relative to the analysed dataset and cannot necessarily be compared to other sites/datasets. Individual registrations of notable species have been added to the heat map to provide further clarity.

Static detector survey

Anabat Insight

To analyse the static detector dataset, bespoke ‘filters’ were created within the Anabat Insight software. The ‘All bats’ filter (which is provided as part of the Anabat Insight software) was used to remove ‘noise’ files where no bat registrations will be detected; this was performed on an ‘Average’ file basis.

The ‘smoothness’ function of Anabat Insight was set to ‘3’ to reduce noise interference within ZC files. A trigger setting of 12-120khz will also be applied to further reduce ‘noise’.

Following this, the resulting bat data was processed using the decision tree function on a ‘per pulse’ basis. The decision tree allowed for multiple, bespoke ‘filters’ to be applied to the dataset simultaneously; resulting in a semi-automated classification system, which is capable of identifying multiple bat species within a single ZC file.

The filters were designed by an experienced bat ecologists from EAD Ecology and used diagnostic characteristics of bat registrations in order to 'group' registrations which 'pass' the filter. The filters were tested and refined against the data collected within the Survey Area to ensure they were as accurate and specific as could be achieved; refer to Table A12.2 for the parameters of each filter. This approach was considered to provide a consistent and repeatable process for the analysis of large volumes of bat registrations, thereby reducing surveyor bias.

The resulting filtered files that were be negative for the species filters presented in Table A12.2 were analysed manually by EAD Ecology staff against bat call characteristics using reference data from known bat roosts, as well as stock recordings from other bat workers and call parameters detailed in relevant literature (Russ, 2021).

Verification of analysis

A proportion of the data (refer to Table A12.2) including filtered 'noise' files were reviewed as part of the analysis process to minimise the risk of bat registrations from key species being omitted from analysis and to ensure robustness of filters. All raw data will be retained on file for future confirmation/validation purposes.

As part of the review process, any individual errors, should they occur, were manually corrected. The accepted error criteria were based on professional judgement and error recorded within these parameters was considered unlikely to materially change the interpretation of the results recorded within the Survey Area.

Table A12.2. Bat filter parameters and number/percentage of files manually verified.

Species filter	Characteristic registration parameters	Minimum number / Percentage of calls manually verified (largest option selected)	Percentage of error accepted during manual verification
Anabat Insight 'Example: All Bats'	As per software; Anabat Insight v2.0.1.	100 files / 10%	<10%
Common pipistrelle <i>Pipistrellus pipistrellus</i>	• Characteristic frequency; 41 - 50 kHz • Pulse duration 1.5 - 8.6ms • Mean frequency 41 – 50kHz • End frequency 40kHz (minimum)	100 files / 10%	<10%
Soprano pipistrelle <i>P. pygmaeus</i>	• Characteristic frequency; 51 - 63 kHz • Pulse duration 1.5 - 8.2ms • Mean frequency 51 – 63kHz	100 files / 10%	<10%
Greater horseshoe bat <i>Rhinolophus ferrumequinum</i>	• Characteristic frequency; 75 - 90kHz • Characteristic slope -10 – 10OPS • Mean frequency 75 – 90kHz	100%	All files manually verified.
Lesser horseshoe bat <i>Rhinolophus hipposideros</i>	• Characteristic frequency; 100 - 120kHz • Characteristic slope -100 – 100OPS • Mean frequency 100 – 120kHz	100%	All files manually verified.

Species filter	Characteristic registration parameters	Minimum number / Percentage of calls manually verified (largest option selected)	Percentage of error accepted during manual verification
<i>Myotis</i> bat <i>Myotis</i> sp.	• Characteristic frequency; 30 - 120kHz • Characteristic slope 100-1500OPS • Mean frequency 30 – 120kHz • Maximum frequency 60kHz (minimum) • Inter-pulse interval 1 – 7.1ms	100 files / 50%	<10%

Analysis with R

The static detector datasets were processed to provide 'Bat Activity Index (BAI)' scores based on number of registrations over a set unit of time. For static detector surveys, the BAI equates to registrations per hour of the night, which is defined in this instance as the period from 30 minutes prior to sunset to 30 minutes post-sunrise (the time in which the static detectors are recording). This allowed a quantitative comparison of bat activity between species and survey month. The BAI was calculated using R version 3.6.2 (R Core Team, 2019).

Species Groups

Species identification from sound files and use of associated sonogram analysis software is constrained where overlaps in the parameters of call structure occur between closely related species. In addition, bats will alter their call characteristics in relation to both habitat structure and their behaviour. This can limit the ability to accurately analyse calls to species level, particularly in the genera's *Myotis* and *Nyctalus*/*Eptesicus*.

Myotis species

Registrations from *Myotis* genus bats are virtually impossible to separate to species level due to their plasticity in call structure and as such, where no other information was available, such as visual observation of bat behaviour, habitat structure, position in relation to known roosts, or clear registrations allowing detailed slope profile analysis, identification to species has not been attempted and registrations were grouped as '*Myotis* sp'.

Big bats

Registrations from *Nyctalus* and *Eptesicus* genus bats demonstrate overlapping sound characteristics and can therefore be subject to misclassification. For the purposes of this assessment, registrations have only separated to species level where clear distinction can be made. Calls showing some of the characteristics but not meeting all of the parameters set out in Table A12.3 were identified as 'big bat' or *Nyctalus* / *Eptesicus* bats.

Table A12.3 Registration parameters used to distinguish *Nyctalus* / *Eptesicus* bats

Species	Characteristic Registration Parameters
<i>Noctule</i> <i>Nyctalus noctula</i>	Registration shows two types of alternating frequency Peak frequency below 21 kHz
<i>Leisler's</i>	Registration shows two types of alternating frequency

Table A12.3 Registration parameters used to distinguish *Nyctalus* / *Eptesicus* bats

Species	Characteristic Registration Parameters
<i>N. leiseri</i>	Peak frequency above 24 kHz
<i>Serotine</i>	Registrations are of a single, consistent type
<i>Eptesicus serotinus</i>	Peak frequency between 24 kHz and 32 kHz

4 Results

At least ten bat species were recorded during the transect and static detector surveys. Species name abbreviations used in the results hereafter are provided in Table A12.4.

Table A12.4: Bat name abbreviations used in results

Common name	Scientific name	Species code
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Pp
Soprano pipistrelle	<i>P. pygmaeus</i>	Ppyg
Nathusius' pipistrelle	<i>P. nathusii</i>	Pn
Undetermined pipistrelle bat	<i>Pipistrellus sp.</i>	Pip
Noctule	<i>Nyctalus noctula</i>	Nn
<i>Nyctalus</i> bat	<i>Nyctalus sp.</i>	Nysp
Noctule, serotine or Leisler's bat	<i>Eptesicus</i> / <i>Nyctalus sp.</i>	EorNy
<i>Myotis</i> bat	<i>Myotis sp.</i>	My sp.
Long-eared bat	<i>Plecotus sp.</i>	Pl sp.
Barbastelle	<i>Barbastelle barbastellus</i>	Bb
Serotine	<i>Eptesicus serotinus</i>	Es
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	LHS
Greater horseshoe bat	<i>Rhinolophus ferrumequinum</i>	GHS

Transect survey

Weather conditions recorded during the transect surveys are provided in Table A12.5.

Table A12.5: Weather conditions during bat transect surveys

Date	Start - end times	Sunset	Cloud (Oktas)	Wind speed (Beaufort)	Temp. (C)
11/04/2022	19:58	19:58	7	1	14
	21:58		4	0	8
26/05/2022	21:09	21:09	8	1-2	14
	23:09		8	1-2	14
15/06/2022	21:29	21:29	0	0	18
	23:29		0	0-1	16
11/07/2022	21:23	21:23	2	1-2	23
	23:23		3	1-2	22
08/08/2022	20:45	20:45	1	1	24
	22:45		0	0-1	21
12/09/2022	19:31	19:31	8	0	19
	21:31		8	0-1	20
10/10/2022	18:27	18:27	1	1	12
	20:27		0	1-2	10

General bat assemblage

At least seven species of bat were identified during the transect surveys with a cumulative total of 1694 registrations recorded across the four transects over all seven survey sessions. Common pipistrelle accounted for the highest number of registrations within the Survey Area (62.57%), followed by soprano pipistrelle (18.36%), noctule (6.85%), *Nyctalus* bat (4.49%), *Myotis* bat (3.84%) and undetermined pipistrelle bat (2.54%). Other bat species that accounted for less than 1% of registrations included noctule, serotine or Leisler's bat (12 registrations), long-eared bat (six registrations), barbastelle (3 registrations) and serotine (two registrations); refer to Table A12.6.

The Bat Activity Plan (Figure A12.2) shows relative densities of bat registrations across the Survey Area with areas of (relatively) higher activity shown in dark green. This plan indicates that the areas of higher bat activity recorded during the surveys generally correlated with the central section of the Survey Area around Forest Farm buildings, but also included an area of hedgerow to the east of these buildings.

Light-averse bat species were located across the Survey Area. *Myotis* bats were recorded in all areas of the Survey Area, with higher activity recorded in the west and south-eastern portions. Long-eared bats were recorded in the south-east of the Survey Area. Two barbastelle registrations were recorded in the south and there was a single barbastelle registration within the west of the Survey Area.

Table A12.6. Transect survey results.

Species	Number of registrations	Percentage (%)
Common pipistrelle	1060	62.57
Soprano pipistrelle	311	18.36
<i>Myotis</i> bat	65	3.84
Noctule	116	6.85
Noctule, serotine or Leisler's bat	12	0.71
Undetermined pipistrelle bat	43	2.54
<i>Nyctalus</i> bat	76	4.49
Serotine	2	0.12
Long-eared bat	6	0.35
Barbastelle	3	0.18
Total	1694	100.00

Static detector survey

General bat assemblage

At least ten species of bat were identified during the static detector surveys with a cumulative total of 56,517 registrations recorded across eight static detector locations. Common pipistrelle accounted for the highest number of registrations within the Survey Area (60.11%), followed by soprano pipistrelle (16.69%), *Myotis* bat (15.70%), noctule, serotine or Leisler's bat (1.99%) and noctule (1.82%). Other species recorded but accounting for less than one percent of the registrations included barbastelle, greater horseshoe, lesser horseshoe, long-eared bat, serotine, *Nyctalus* bat, unidentified pipistrelle species and *Nathusius'* pipistrelle.

Four static detectors recorded levels of bat activity above the mean bat activity index (BAI) recorded across the Survey Area (BAI 18.90); these were Positions 1, 2, 3 and 8. Bat activity levels were highest at Position 8, which recorded a BAI of 36.27, compared to a BAI of 28.36 at Position 1 which recorded the second highest bat activity levels. This was followed by Position 2 (BAI 25.65) and Position 3 (BAI 22.98). Activity at Position 8 was dominated by three species (common pipistrelle, soprano pipistrelle and *Myotis* bat),

comprising 96.5% of registrations recorded at this location. Position 1, 2 and 3 followed a similar trend to Position 8, with the same three species comprising more than 90% of bat activity recorded. These static detectors were located in the southern and western portions of the Survey Area; refer to Figure A12.1.

The levels of bat activity were lowest within the central and northern parts of the Survey Area. This includes Position 4 (BAI 13.58), Position 5 (BAI 16.30), Position 6 (BAI 3.53), Position 7 (BAI 4.58).

Light-averse bat species recorded within the Survey Area included *Myotis* bat, long-eared bat, lesser horseshoe bat, greater horseshoe bat and barbastelle. Long-eared bat activity was recorded at all static detector locations with a total of 526 registrations recorded across the Survey Area (BAI 0.18). Position 1 recorded the highest levels of long-eared bat activity (194 registrations; BAI 0.52), followed by Position 4 (151 registrations; BAI 0.40) and Position 2 (96 registrations; BAI 0.26). Elevations in activity were recorded in May and August at Position 1, August at Position 2 and August to September at Position 4.

Myotis species

Myotis bats were recorded at all static detector positions with a total of 8870 registrations recorded. Bechstein's bat cannot be reliably identified from other species in the *Myotis* genus by acoustic analysis alone. Therefore, all analysis of this dataset takes the entire *Myotis* genus into account. In this way, potential Bechstein's activity would not be incorrectly discounted. Monthly *Myotis* activity was highest at Position 8 (4111 registrations; BAI 11.00) followed by Position 2 (1877 registrations; BAI 5.02). These detectors were located along the north-western boundary of the Survey Area and south-west of the farm buildings. The highest *Myotis* activity was recorded at Position 8 in September (1777 registrations; BAI 28.52) and Position 2 in September (873 registrations; BAI 14.01); refer to Tables A12.7-A12.8.

Monthly variation in *Myotis* bat activity was observed within the Survey Area, although no obvious trends were observed. *Myotis* bat activity (BAI) was highest in May at Positions 1 and 3, in July at Positions 4 and 7, and in September at Positions 2, 5, 6 and 8. The largest observed peak in *Myotis* bat activity was recorded in September. The peak number of *Myotis* bat registrations recorded on a single night at a single static detector location was 752 registrations (Position 2; 19/09/2022) and 671 registrations (Position 8; 19/09/2022). High *Myotis* bat activity in September coincides with the start of the *Myotis* bat mating season, so it is possible that the increase in activity could be related to the presence of a mating roost/Autumn swarming roost nearby. The nearest recorded *Myotis* bat roost was a Natterer's roost, approximately 1.6km south-west of the Survey Area.

Barbastelle

Barbastelle bats were recorded at all static detector locations with a total of 559 registrations recorded across the Survey Area (BAI 0.19). The highest levels of activity were recorded at Position 4 (BAI 0.33), Position 3 (BAI 0.29), Position 8 (BAI 0.29) and Position 1 (BAI 0.28). These detectors were located in the south-eastern portion and along the western boundary of the Survey Area; refer to Figure A12.1. The highest barbastelle activity was recorded at Position 1 in August (102 registrations; BAI 1.92) and Position 8 in August (98 registrations; BAI 1.85); refer to Tables A12.7-A12.8. However, barbastelle registrations were only recorded on 86 nights of the total 280 surveyed nights across all static positions between April – October (30.7%). This suggests that the Survey Area provides suitable foraging habitat but it is not a core commuting / foraging location for barbastelle.

The largest observed peak in barbastelle activity was recorded in August (320 registrations). The peak registrations recorded on individual nights at a single static detector was 49 registrations at Position 1 (19/08/2022) and 42 registrations at Position 2 (21/08/2022). The earliest registration recorded within the Survey Area was approximately 23 minutes after sunset; this may suggest that these bats are associated with a nearby roost although none have been identified.

Greater horseshoe bats

Greater horseshoe bats (GHS) were recorded at five static detector locations (Positions 2, 3, 4, 7 and 8) with a total of 40 registrations recorded across the Survey Area (BAI 0.01). GHS activity was highest at Position 3 (22 registrations; BAI 0.06); this detector was located on the southern boundary of the Survey Area; refer to Figure A12.1. The highest GHS activity was recorded at Position 3 in July (16 registrations; BAI 0.35), however the majority of these registrations (8) occurred on one night (23/07/2022). This peak is not considered representative of the nightly GHS bat activity for the Survey Area, which usually varied between zero and four registrations on a static detector in a single night. GHS 'foraging activity', as defined by Miller (2001), was not recorded within the Survey Area, and overall GHS activity was considered to be low.

Lesser horseshoe bats

Lesser horseshoe bats (LHS) were recorded at all static detector locations with the exception of Position 5, which did not record any LHS bat activity. A total of 168 registrations (BAI 0.06) were recorded across the Survey Area. The highest levels of LHS activity were recorded at Position 3 (BAI 0.17) and Position 8 (BAI 0.13); these detectors were located along the southern and north-western boundary of the Survey Area; refer to Figure A12.1.

Monthly variation in LHS activity was observed within the Survey Area with peaks in activity recorded in May and September; refer to Tables A12.7-A12.8 and Graph A12.7.

The highest monthly LHS activity was recorded at Position 3 in May (35 registrations; BAI 0.73); refer to Tables A12.7-A12.8. The peak number of LHS registrations recorded on a single night at a single detector location was 20 (Position 3; 12/05/2022), however, overall LHS registrations were only recorded on 49 nights of the total 280 surveyed nights across all static positions between April – October (17.5%). This suggests that the Survey Area is not a core commuting / foraging location for lesser horseshoe bats with activity sporadic rather than consistent or regular over consecutive nights.

Temporal activity patterns of LHS registrations across the survey period (April – October) are generally indicative of commuting and foraging within the Survey Area; refer to Graph A12.8¹³. Evidence of foraging contacts were recorded at Position 2 (August and September), Position 3 (May, June and October) and Position 8 (June, August and September), although the numbers of foraging contacts recorded were not high enough to meet the definition of 'foraging activity' as defined by Miller (2001).

5 Summary

Overall, it was considered that habitats within the Survey Area supported moderate numbers of foraging and commuting bats, with at least ten bat species recorded. The highest levels of bat activity were found to occur in the west of the Survey Area, particularly along the western Survey Area boundary. The mature, well-established hedgerows onsite are important for supporting the populations of bat species recorded within the Survey Area, with the lowest levels of activity occurring in the centre of fields; refer to Figure A12.2.

6 References

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¹³ Lesser horseshoe bats' median emergence is 31 minutes after sunset (Jones & Rydell, 1994).

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Table A12.7. Number of registrations recorded within the Survey Area

Static Detector Location	Month	Mysp	Nn	Nysp	Plsp	Pp	Ppyg	Bb	EorNy	Es	LHS	Pip	Pn	GHS	Total
1	Apr	17	6	1	13	8	4	0	0	0	0	0	0	0	49
	May	347	0	3	60	2960	265	0	9	8	3	15	1	0	3671
	Jun	12	9	0	7	708	143	0	11	5	0	0	0	0	895
	Jul	335	36	1	30	2073	418	0	47	35	0	0	0	0	2975
	Aug	164	113	8	84	1349	211	102	401	17	3	4	0	0	2456
	Sep	8	0	0	0	198	72	0	0	0	0	2	0	0	280
	Oct	30	0	0	0	133	105	2	0	1	0	0	0	0	271
	Total	913	164	13	194	7429	1218	104	468	66	6	21	1	0	10597
2	Apr	5	1	2	0	303	2	0	0	0	0	0	0	0	313
	May	44	1	1	1	550	38	0	0	0	0	0	0	0	635
	Jun	32	2	0	3	1513	43	0	3	0	0	1	0	0	1597
	Jul	394	2	0	2	2548	94	0	10	7	0	0	0	0	3057
	Aug	488	4	0	64	802	172	56	38	0	13	0	0	1	1638
	Sep	873	1	0	26	219	105	1	3	5	19	0	0	4	1256
	Oct	41	0	0	0	729	317	0	1	0	2	0	0	0	1090
	Total	1877	11	3	96	6664	771	57	55	12	34	1	0	5	9586
3	Apr	17	16	0	1	109	7	2	0	0	0	1	0	0	153
	May	502	5	0	8	2292	118	4	3	1	35	0	0	2	2970
	Jun	9	2	0	2	308	21	1	6	0	3	0	0	1	353
	Jul	231	16	6	5	1669	761	16	8	12	0	0	1	16	2741
	Aug	157	11	4	2	346	352	44	10	10	6	1	0	1	944
	Sep	75	2	0	7	73	89	37	8	0	2	0	0	1	294
	Oct	39	5	0	5	741	312	6	4	0	18	0	0	1	1131
	Total	1030	57	10	30	5538	1660	110	39	23	64	2	1	22	8586

Table A12.7. Number of registrations recorded within the Survey Area

Static Detector Location	Month	Mysp	Nn	Nysp	Plsp	Pp	Ppyg	Bb	EorNy	Es	LHS	Pip	Pn	GHS	Total
4	Apr	10	1	0	0	314	254	1	0	0	0	0	0	0	580
	May	5	1	4	2	250	221	0	1	0	0	0	0	0	484
	Jun	14	1	2	11	248	75	24	2	10	1	0	0	0	388
	Jul	182	5	19	0	1208	459	44	7	5	2	0	0	4	1935
	Aug	140	3	0	52	315	306	12	0	2	2	0	0	0	832
	Sep	75	2	0	79	354	173	37	1	3	6	0	0	2	732
	Oct	40	3	0	7	26	37	7	0	2	2	0	0	0	124
	Total	466	16	25	151	2715	1525	125	11	22	13	0	0	6	5075
5	Apr	2	9	0	0	71	4	1	0	0	0	0	0	0	87
	May	0	11	16	1	111	10	0	3	0	0	0	0	0	152
	Jun	21	208	32	1	1435	157	0	21	3	0	0	0	0	1878
	Jul	3	3	13	0	1127	139	0	1	1	0	0	0	0	1287
	Aug	1	0	247	0	628	92	0	36	2	0	0	0	0	1006
	Sep	246	467	108	5	467	251	1	2	0	0	0	0	0	1547
	Oct	5	37	0	0	63	30	0	0	0	0	0	0	0	135
	Total	278	735	416	7	3902	683	2	63	6	0	0	0	0	6092
6	Apr	4	0	0	0	7	0	0	0	0	0	0	0	0	11
	May	11	2	1	1	50	11	1	5	0	0	0	0	0	82
	Jun	6	0	0	0	67	11	0	1	15	0	0	0	0	100
	Jul	10	2	0	0	136	41	1	8	46	0	0	0	0	244
	Aug	36	0	0	2	131	38	5	9	43	1	0	0	0	265
	Sep	63	0	0	2	208	153	5	8	2	0	0	0	0	441
	Oct	2	0	0	0	119	34	18	0	0	2	0	0	0	175
	Total	132	4	1	5	718	288	30	31	106	3	0	0	0	1318

Table A12.7. Number of registrations recorded within the Survey Area

Static Detector Location	Month	Mysp	Nn	Nysp	Plsp	Pp	Ppyg	Bb	EorNy	Es	LHS	Pip	Pn	GHS	Total
7	Apr	1	0	0	0	2	3	0	0	0	0	0	0	0	6
	May	2	0	1	0	63	5	1	4	0	0	0	0	0	76
	Jun	0	0	0	0	129	37	0	8	4	0	0	0	0	178
	Jul	45	0	0	1	574	28	2	6	16	0	0	0	0	672
	Aug	2	0	0	2	292	53	3	52	1	0	0	0	0	405
	Sep	10	0	0	2	19	18	3	195	3	0	0	0	0	250
	Oct	3	0	0	0	85	20	12	1	0	1	0	0	1	123
	Total	63	0	1	5	1164	164	21	266	24	1	0	0	1	1710
8	Apr	171	1	0	0	299	264	1	0	0	0	0	0	0	736
	May	777	11	20	0	1529	1463	0	62	0	2	0	0	0	3864
	Jun	349	6	0	2	1064	407	1	8	0	7	0	0	0	1844
	Jul	400	8	0	6	1118	278	2	24	0	5	0	0	1	1842
	Aug	584	1	0	30	788	377	98	50	22	14	1	0	2	1967
	Sep	1777	16	0	0	672	291	7	44	0	19	0	0	3	2829
	Oct	53	0	0	0	371	45	1	1	0	0	0	0	0	471
	Total	4111	43	20	38	5841	3125	110	189	22	47	1	0	6	13553
Total	-	8870	1030	489	526	33971	9434	559	1122	281	168	25	2	40	56517

Table A12.8. Bat Activity Index (BAI) recorded within the Survey Area

Static Detector Location	Month	Mysp	Nn	Nysp	Plsp	Pp	Ppyg	Bb	EorNy	Es	LHS	Pip	Pn	GHS	Total
1	Apr	0.32	0.11	0.02	0.24	0.15	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92
	May	7.28	0.00	0.06	1.26	62.06	5.56	0.00	0.19	0.17	0.06	0.31	0.02	0.00	76.97
	Jun	0.29	0.21	0.00	0.17	16.88	3.41	0.00	0.26	0.12	0.00	0.00	0.00	0.00	21.34
	Jul	7.38	0.79	0.02	0.66	45.67	9.21	0.00	1.04	0.77	0.00	0.00	0.00	0.00	65.54
	Aug	3.09	2.13	0.15	1.58	25.39	3.97	1.92	7.55	0.32	0.06	0.08	0.00	0.00	46.23
	Sep	0.13	0.00	0.00	0.00	3.18	1.16	0.00	0.00	0.00	0.00	0.03	0.00	0.00	4.49
	Oct	0.43	0.00	0.00	0.00	1.90	1.50	0.03	0.00	0.01	0.00	0.00	0.00	0.00	3.86
	Total	2.44	0.44	0.03	0.52	19.88	3.26	0.28	1.25	0.18	0.02	0.06	0.00	0.00	28.36
2	Apr	0.09	0.02	0.04	0.00	5.70	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.89
	May	0.92	0.02	0.02	0.02	11.53	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.31
	Jun	0.76	0.05	0.00	0.07	36.07	1.03	0.00	0.07	0.00	0.00	0.02	0.00	0.00	38.07
	Jul	8.68	0.04	0.00	0.04	56.14	2.07	0.00	0.22	0.15	0.00	0.00	0.00	0.00	67.35
	Aug	9.19	0.08	0.00	1.20	15.10	3.24	1.05	0.72	0.00	0.24	0.00	0.00	0.02	30.83
	Sep	14.01	0.02	0.00	0.42	3.51	1.69	0.02	0.05	0.08	0.30	0.00	0.00	0.06	20.16
	Oct	0.58	0.00	0.00	0.00	10.40	4.52	0.00	0.01	0.00	0.03	0.00	0.00	0.00	15.54
	Total	5.02	0.03	0.01	0.26	17.83	2.06	0.15	0.15	0.03	0.09	0.00	0.00	0.01	25.65
3	Apr	0.32	0.30	0.00	0.02	2.05	0.13	0.04	0.00	0.00	0.00	0.02	0.00	0.00	2.88
	May	10.53	0.10	0.00	0.17	48.06	2.47	0.08	0.06	0.02	0.73	0.00	0.00	0.04	62.27
	Jun	0.21	0.05	0.00	0.05	7.34	0.50	0.02	0.14	0.00	0.07	0.00	0.00	0.02	8.42
	Jul	5.09	0.35	0.13	0.11	36.77	16.77	0.35	0.18	0.26	0.00	0.00	0.02	0.35	60.39
	Aug	2.96	0.21	0.08	0.04	6.51	6.63	0.83	0.19	0.19	0.11	0.02	0.00	0.02	17.77
	Sep	1.20	0.03	0.00	0.11	1.17	1.43	0.59	0.13	0.00	0.03	0.00	0.00	0.02	4.72
	Oct	0.56	0.07	0.00	0.07	10.57	4.45	0.09	0.06	0.00	0.26	0.00	0.00	0.01	16.13
	Total	2.76	0.15	0.03	0.08	14.82	4.44	0.29	0.10	0.06	0.17	0.01	0.00	0.06	22.98

Table A12.8. Bat Activity Index (BAI) recorded within the Survey Area

Static Detector Location	Month	Mysp	Nn	Nysp	Plsp	Pp	Ppyg	Bb	EorNy	Es	LHS	Pip	Pn	GHS	Total
4	Apr	0.19	0.02	0.00	4.78	5.91		0.02	0.00	0.00	0.00	0.00	0.00	0.00	10.92
	May	0.10	0.02	0.08	0.04	5.24	4.63	0.00	0.02	0.00	0.00	0.00	0.00	0.00	10.15
	Jun	0.33	0.02	0.05	0.26	5.91	1.79	0.57	0.05	0.24	0.02	0.00	0.00	0.00	9.25
	Jul	4.01	0.11	0.42	0.00	26.61	10.11	0.97	0.15	0.11	0.04	0.00	0.00	0.09	42.63
	Aug	2.64	0.06	0.00	0.98	5.93	5.76	0.23	0.00	0.04	0.04	0.00	0.00	0.00	15.66
	Sep	1.20	0.03	0.00	1.27	5.68	2.78	0.59	0.02	0.05	0.10	0.00	0.00	0.03	11.75
	Oct	0.57	0.04	0.00	0.10	0.37	0.53	0.10	0.00	0.03	0.03	0.00	0.00	0.00	1.77
	Total	1.25	0.04	0.07	0.40	7.27	4.08	0.33	0.03	0.06	0.03	0.00	0.00	0.02	13.58
5	Apr	0.04	0.17	0.00	0.00	1.34	0.08	0.02	0.00	0.00	0.00	0.00	0.00	0.00	1.64
	May	0.00	0.23	0.34	0.02	2.33	0.21	0.00	0.06	0.00	0.00	0.00	0.00	0.00	3.19
	Jun	0.50	4.96	0.76	0.02	34.21	3.74	0.00	0.50	0.07	0.00	0.00	0.00	0.00	44.77
	Jul	0.07	0.07	0.29	0.00	24.83	3.06	0.00	0.02	0.02	0.00	0.00	0.00	0.00	28.35
	Aug	0.02	0.00	4.65	0.00	11.82	1.73	0.00	0.68	0.04	0.00	0.00	0.00	0.00	18.94
	Sep	3.95	7.49	1.73	0.08	7.49	4.03	0.02	0.03	0.00	0.00	0.00	0.00	0.00	24.83
	Oct	0.07	0.53	0.00	0.00	0.90	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.93
	Total	0.74	1.97	1.11	0.02	10.44	1.83	0.01	0.17	0.02	0.00	0.00	0.00	0.00	16.30
6	Apr	0.08	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21
	May	0.23	0.04	0.02	0.02	1.05	0.23	0.02	0.10	0.00	0.00	0.00	0.00	0.00	1.72
	Jun	0.14	0.00	0.00	0.00	1.60	0.26	0.00	0.02	0.36	0.00	0.00	0.00	0.00	2.38
	Jul	0.22	0.04	0.00	0.00	3.00	0.90	0.02	0.18	1.01	0.00	0.00	0.00	0.00	5.38
	Aug	0.68	0.00	0.00	0.04	2.47	0.72	0.09	0.17	0.81	0.02	0.00	0.00	0.00	4.99
	Sep	1.01	0.00	0.00	0.03	3.34	2.46	0.08	0.13	0.03	0.00	0.00	0.00	0.00	7.08
	Oct	0.03	0.00	0.00	0.00	1.70	0.48	0.26	0.00	0.00	0.03	0.00	0.00	0.00	2.50
	Total	0.35	0.01	0.00	0.01	1.92	0.77	0.08	0.08	0.28	0.01	0.00	0.00	0.00	3.53

Table A12.8. Bat Activity Index (BAI) recorded within the Survey Area

Static Detector Location	Month	Mysp	Nn	Nysp	Plsp	Pp	Ppyg	Bb	EorNy	Es	LHS	Pip	Pn	GHS	Total
7	Apr	0.02	0.00	0.00	0.00	0.04	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
	May	0.04	0.00	0.02	0.00	1.32	0.10	0.02	0.08	0.00	0.00	0.00	0.00	0.00	1.59
	Jun	0.00	0.00	0.00	0.00	3.08	0.88	0.00	0.19	0.10	0.00	0.00	0.00	0.00	4.24
	Jul	0.99	0.00	0.00	0.02	12.65	0.62	0.04	0.13	0.35	0.00	0.00	0.00	0.00	14.81
	Aug	0.04	0.00	0.00	0.04	5.50	1.00	0.06	0.98	0.02	0.00	0.00	0.00	0.00	7.62
	Sep	0.16	0.00	0.00	0.03	0.30	0.29	0.05	3.13	0.05	0.00	0.00	0.00	0.00	4.01
	Oct	0.04	0.00	0.00	0.00	1.21	0.29	0.17	0.01	0.00	0.01	0.00	0.00	0.01	1.75
	Total	0.17	0.00	0.00	0.01	3.11	0.44	0.06	0.71	0.06	0.00	0.00	0.00	0.00	4.58
8	Apr	3.22	0.02	0.00	0.00	5.63	4.97	0.02	0.00	0.00	0.00	0.00	0.00	0.00	13.86
	May	16.29	0.23	0.42	0.00	32.06	30.68	0.00	1.30	0.00	0.04	0.00	0.00	0.00	81.02
	Jun	8.32	0.14	0.00	0.05	25.37	9.70	0.02	0.19	0.00	0.17	0.00	0.00	0.00	43.96
	Jul	8.81	0.18	0.00	0.13	24.63	6.12	0.04	0.53	0.00	0.11	0.00	0.00	0.02	40.58
	Aug	10.99	0.02	0.00	0.56	14.83	7.10	1.84	0.94	0.41	0.26	0.02	0.00	0.04	37.03
	Sep	28.52	0.26	0.00	0.00	10.78	4.67	0.11	0.71	0.00	0.30	0.00	0.00	0.05	45.40
	Oct	0.76	0.00	0.00	0.00	5.29	0.64	0.01	0.01	0.00	0.00	0.00	0.00	0.00	6.72
	Total	11.00	0.12	0.05	0.10	15.63	8.36	0.29	0.51	0.06	0.13	0.00	0.00	0.02	36.27
Total	-	2.97	0.34	0.16	0.18	11.36	3.16	0.19	0.38	0.09	0.06	0.01	0.00	0.01	18.90

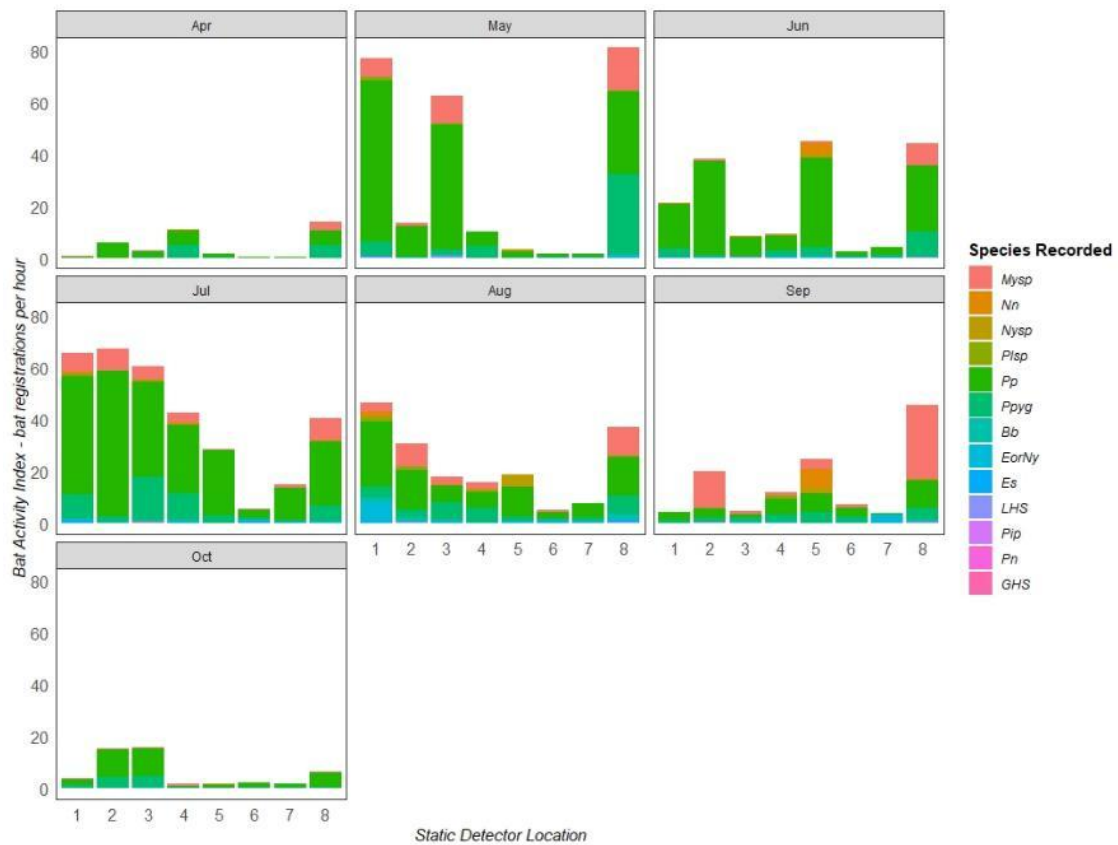
Table A12.9 Number of hours static detectors were deployed at each Position (April – October)

Static Detector Location	Month	Total hours of active deployment
1	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70
2	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70
3	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70
4	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70
5	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70

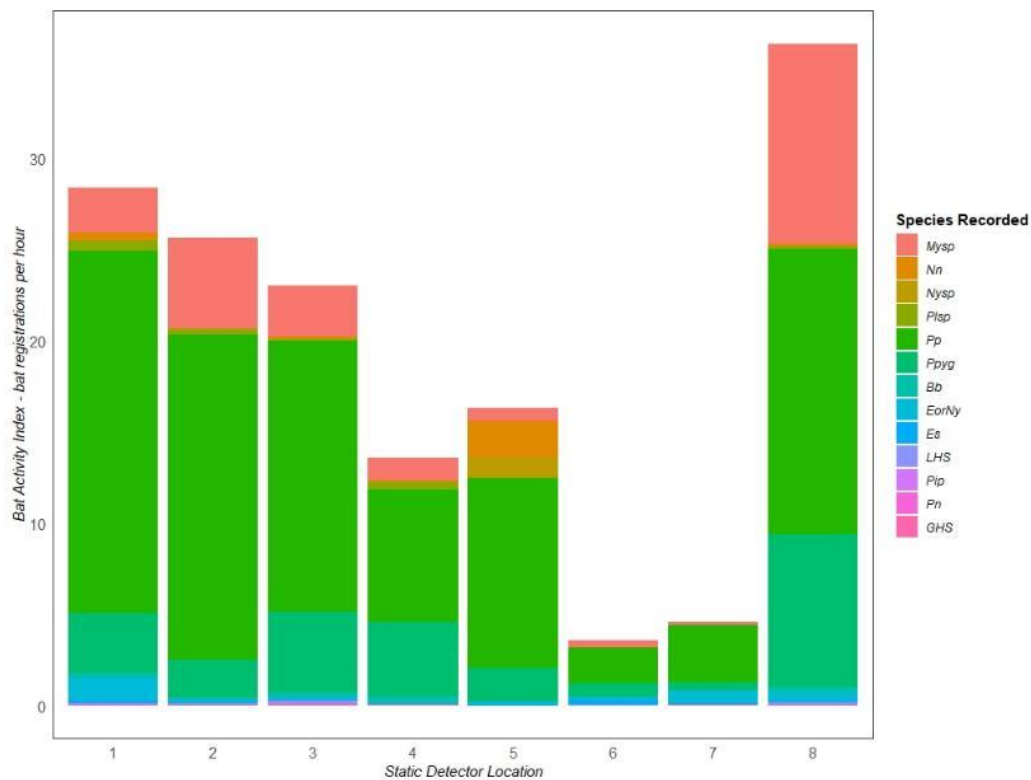
Table A12.9 Number of hours static detectors were deployed at each Position (April – October)

Static Detector Location	Month	Total hours of active deployment
6	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70
7	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70
8	Apr	53.12
	May	47.69
	Jun	41.95
	Jul	45.39
	Aug	53.13
	Sep	62.31
	Oct	70.12
	Total	373.70
Total	-	2989.62

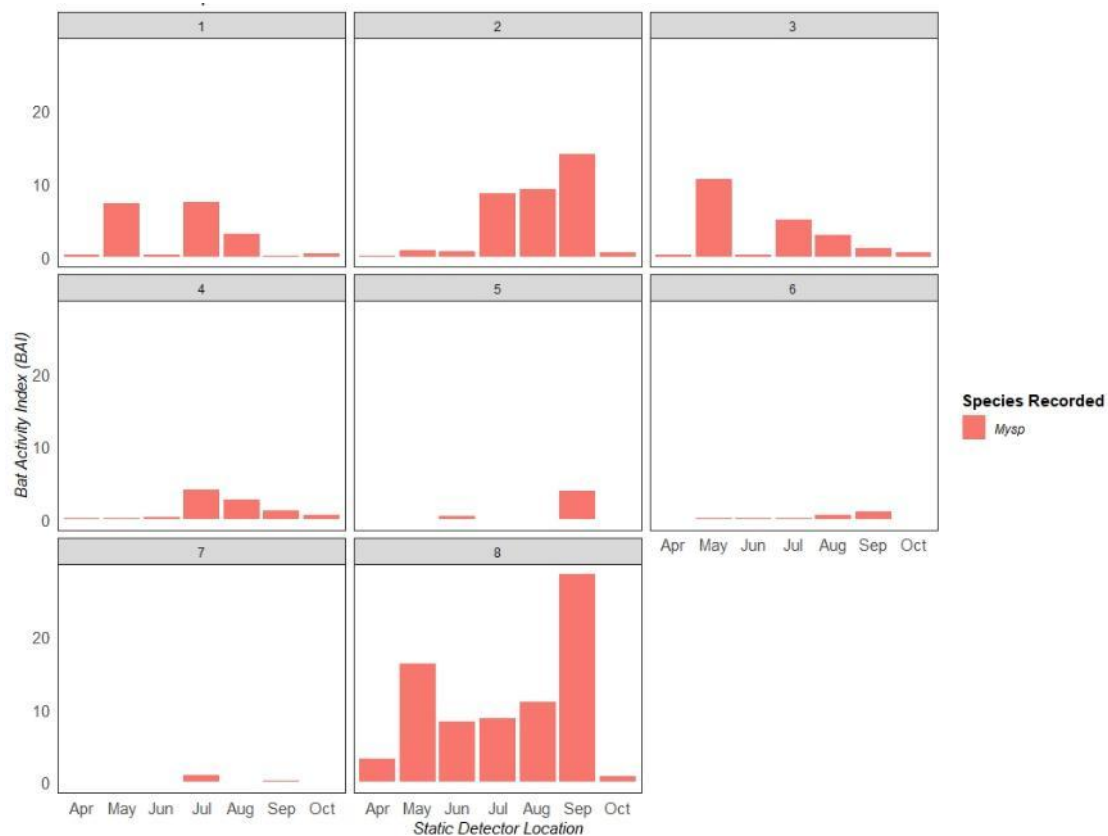
Graph A12.1. Monthly variation in BAI across the Survey Area.



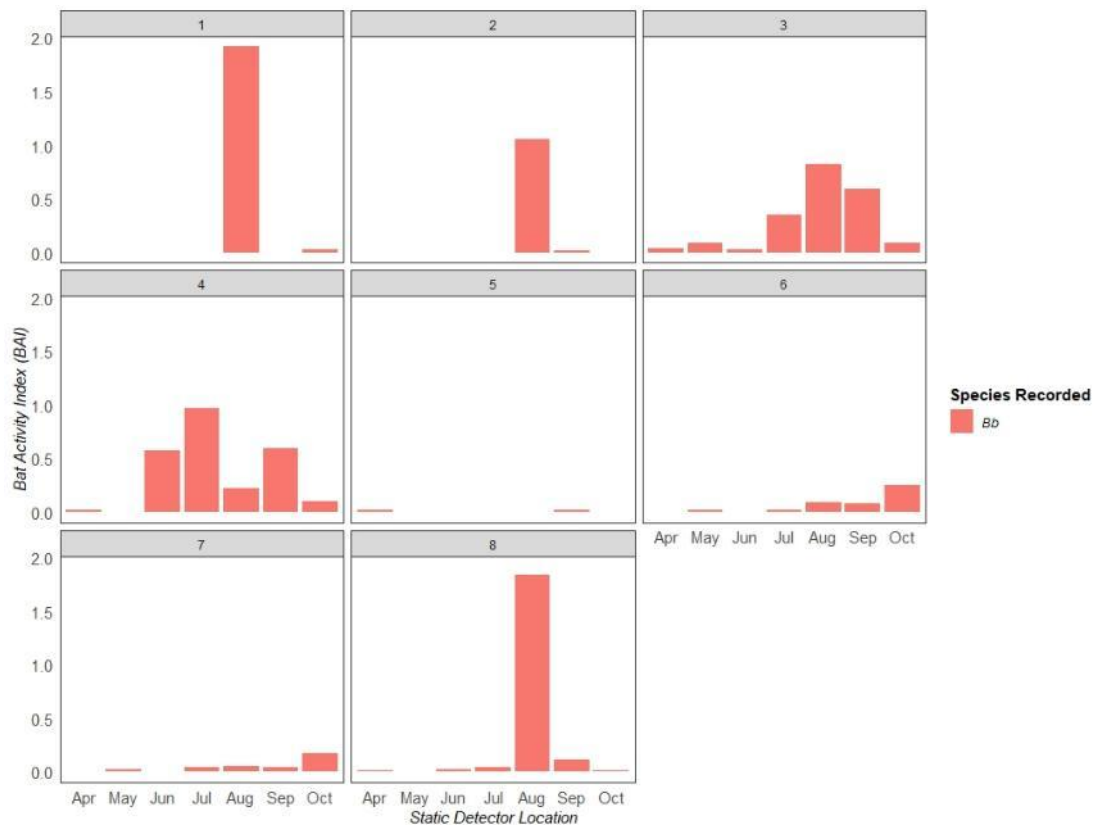
Graph A12.2. Bat Activity Index (BAI) recorded across the Survey Area.



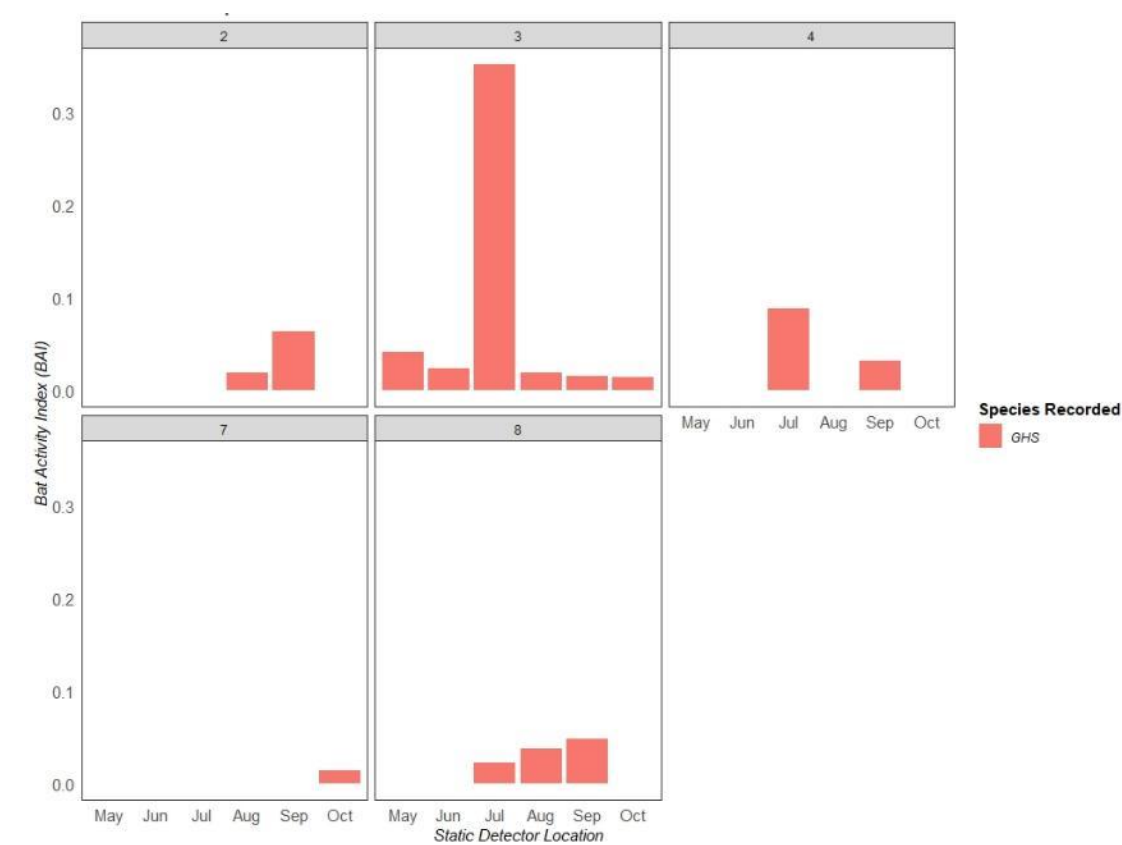
Graph A12.3. *Myotis* species (Mysp) activity recorded across the Survey Area.



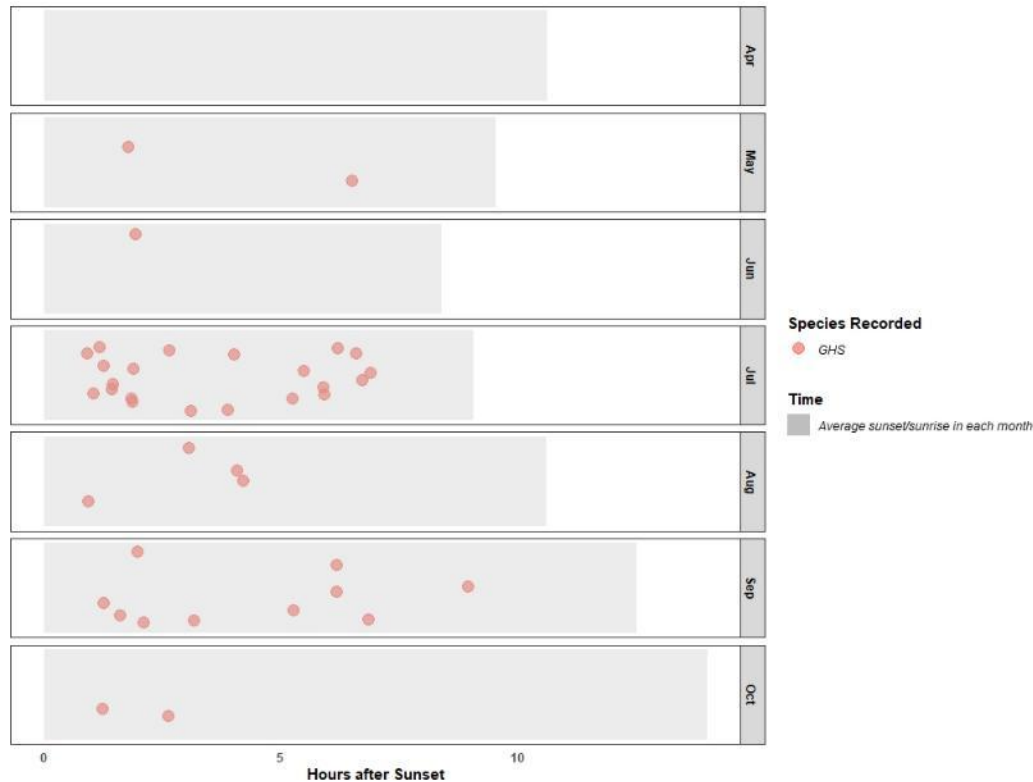
Graph A12.4. Barbastelle (Bb) activity recorded across the Survey Area.



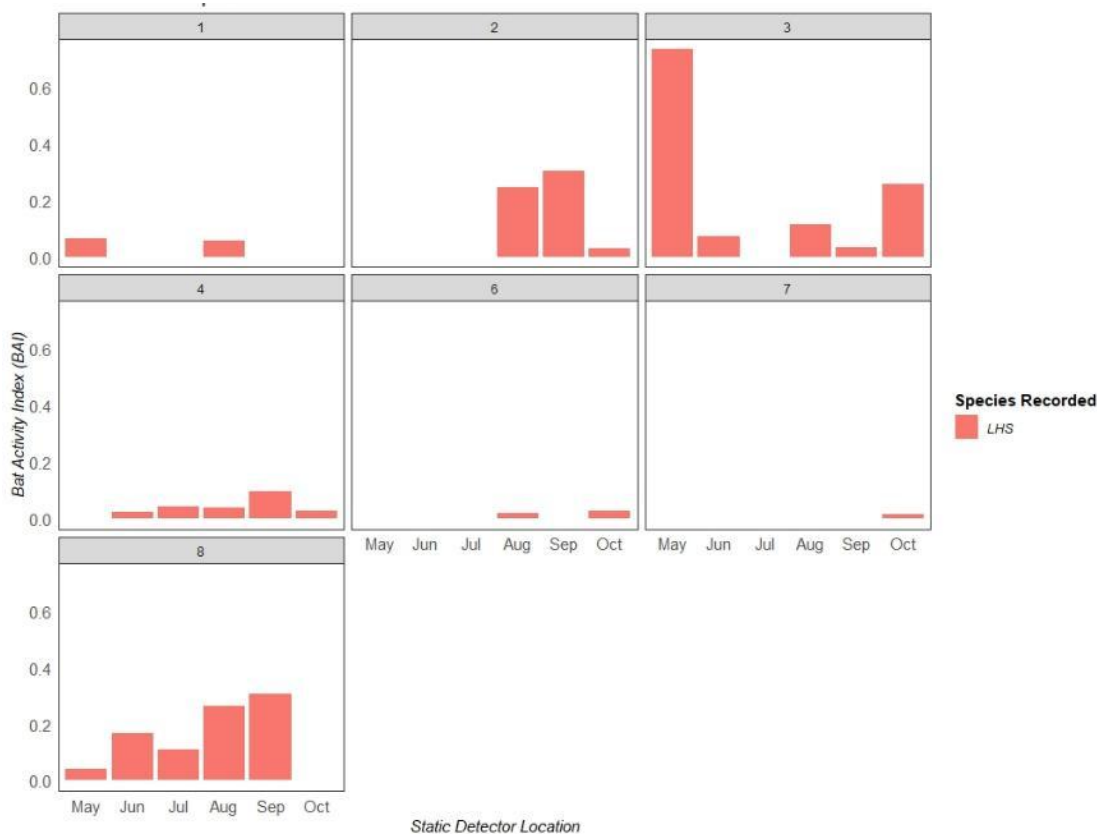
Graph A12.5. Greater horseshoe (GHS) activity recorded across the Survey Area.



Graph A12.6. Temporal distribution of GHS registrations within the Survey Area; all static detector locations.



Graph A12.7. Lesser horseshoe (LHS) activity recorded across the Survey Area.



Graph A12.8. Temporal distribution of LHS registrations within the Survey Area; all static detector locations.

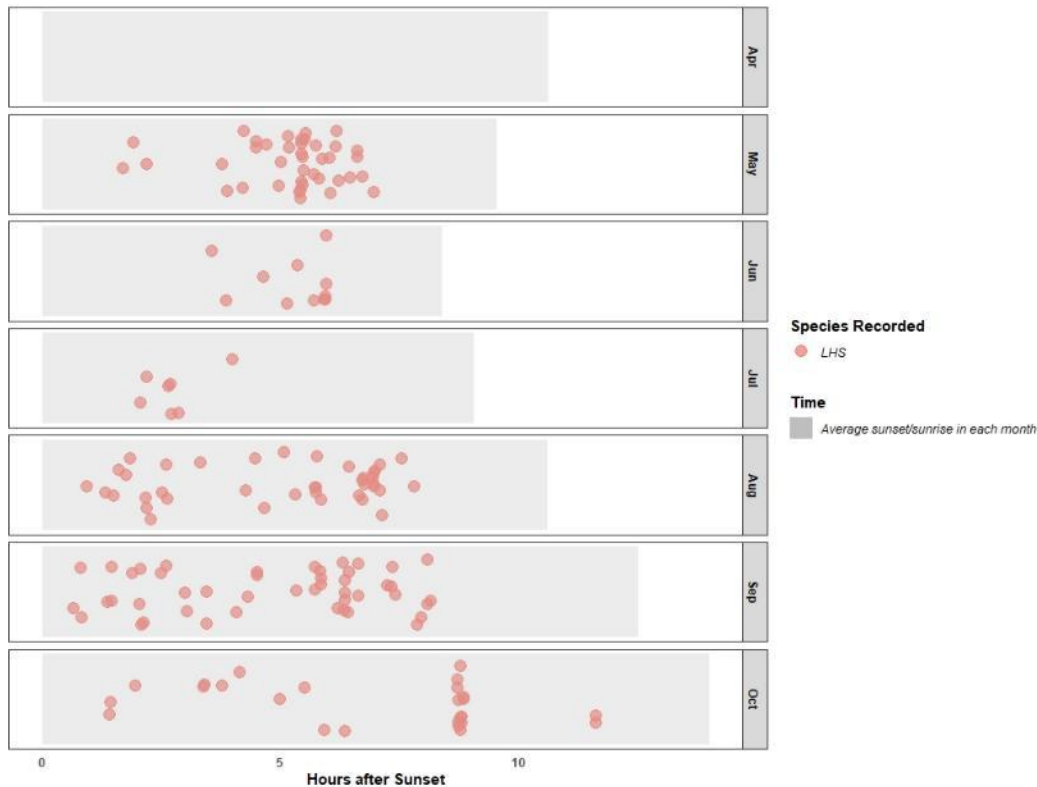
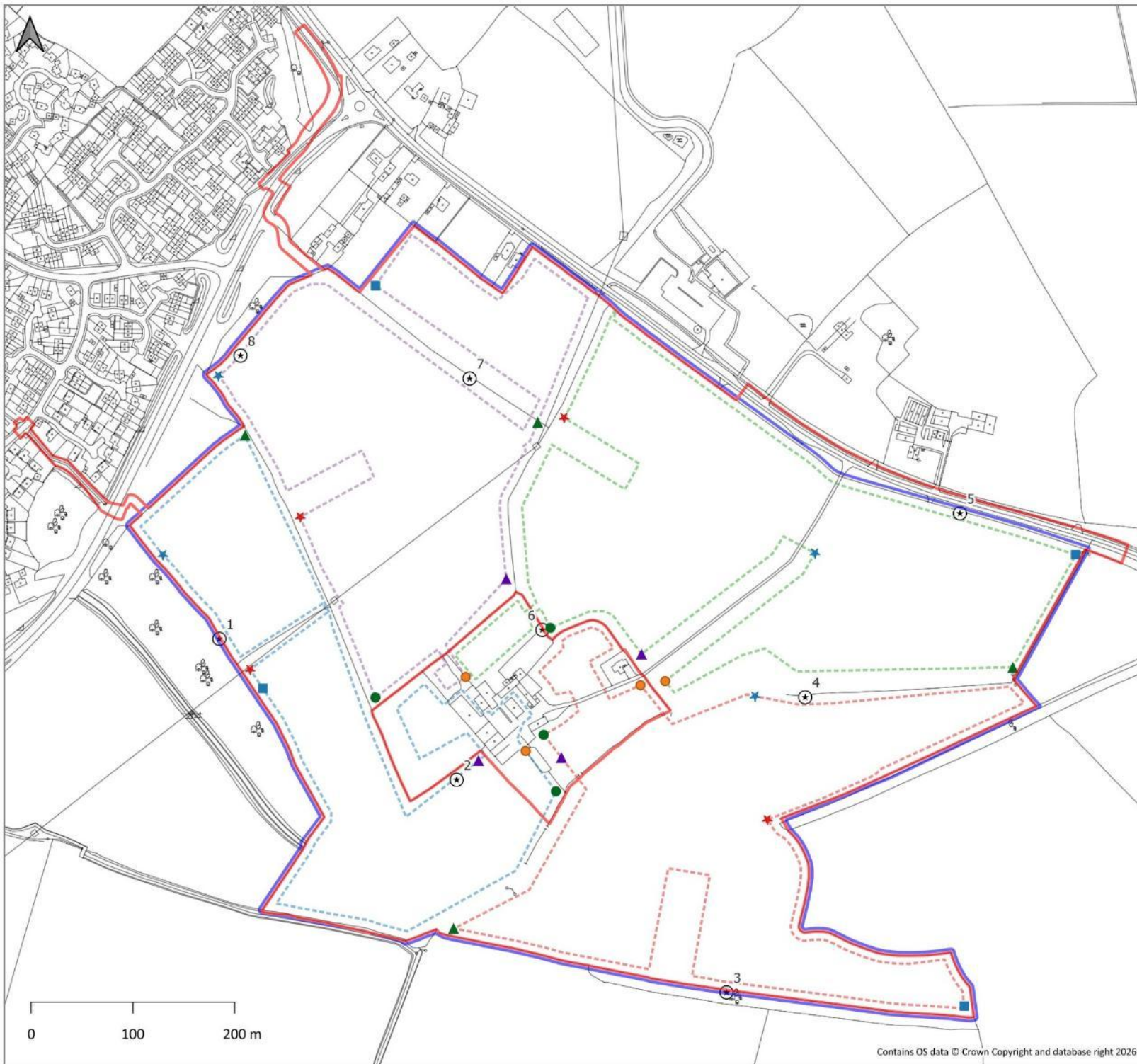


Figure A12.1: Bat Survey Plan



Key

- Site boundary
- Survey boundary
- April start point (clockwise)
- May start point (anti-clockwise)
- ▲ June start point (clockwise)
- ★ July start point (anti-clockwise)
- ▲ August start point (clockwise)
- ★ September start point (anti-clockwise)
- October start point (clockwise)
- ⊙ Static detector location
- Transect route 1
- Transect route 2
- Transect route 3
- Transect route 4

0 100 200 m

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Gleeson Land

Forest Farm Chippenham

Bat Survey Plan

25/06/2026

Created by: EG

Scale at A3: 1:3,600

Figure A12.2: Bat Activity Survey Plan



Key

- Site boundary
- Survey boundary
- Pisp
- Bb
- Mysp
- Walkover route 1
- Walkover route 2
- Walkover route 3
- Walkover route 4

Estimated bat registration density (all bat species)

NB: The density of bat registrations is relative only to the site and cannot be compared to other sites or data sets.

Highest
Lowest

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	Forest Farm Chippenham		
	Bat Activity Survey Plan		
	25/06/2026	Created by: EG	Scale at A3 1:3,600

Appendix 13: Bat Roost Survey (buildings)

Bat roost surveys of buildings

1 Methodology

Preliminary roost inspection

The buildings within the Survey Area were inspected on 03 July 2014 and 12 April 2022 by a Natural England-licensed bat ecologist for their potential to support roosting bats. The inspections followed Bat Conservation Trust (BCT) best practice guidance available at the time of the surveys (BCT 2007 and Collins [ed.] 2016; refer to Table A13.1 – as the most recent survey data is considered most relevant, only 2016 guidelines are shown) and involved a search of the interior and exterior of the structures for evidence of bats such as droppings and feeding remains. Ladders, a high-powered torch and an endoscope were used as necessary.

Table A13.1 Guidelines for assessing the potential suitability of proposed development sites for bats (adapted from Collins, 2016)

Suitability	Description of Roosting habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of the species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Emergence/ re-entry surveys

In line with BCT guidelines, buildings with Moderate suitability for roosting bats (refer to Table A13.3) were subject to a dusk emergence and dawn re-entry survey to confirm presence/likely absence. Under BCT guidance available at the time (Collins [ed.] 2016), Confirmed Roosts require sufficient survey effort to adequately characterise roost status; this was considered to be three emergence surveys; refer to Table A13.2 for survey dates and details. No further surveys were undertaken of the buildings with Negligible suitability for roosting bats.

The dusk emergence surveys commenced 15 minutes before sunset and continued for up to 120 minutes after sunset. The dawn re-entry surveys commenced 90 minutes before sunrise, and finished 15 minutes after sunrise. Surveyors were located in predetermined positions around the buildings in order to observe suitable bat access features. Surveyors were equipped with broadband bat detectors (Anabat Express and Batbox duet) in order to record any echolocation calls ('registrations') for subsequent analysis.

Table A13.2: Weather conditions during emergence and re-entry surveys

Survey	Date	Start/end time	Sunset/sunrise	Cloud (Oktas)	Wind speed (Beaufort)	Temperature (C)
2014 surveys						
Emergence	29/07/2014	20:45	21:00	3	1	21
		22:30				
Emergence	10/08/2014	20:25	20:40	4	3	15
		22:10				
Re-entry	11/08/2014	05:24	05:39	7	0	14
		07:09				
Emergence	28/08/2014	19:47	20:02	5	1	19
		21:32				
Emergence	10/09/2014	19:20	19:35	0	1	18
		21:05				
Re-entry	11/09/2014	06:23	06:38	0	1	8
		07:09				
2022 surveys						
Emergence	04/07/2022	21:05	21:29	4	3	15
		22:59				
Re-entry	05/07/2022	03:28	04:58	0	0	9
		05:05				
Emergence	19/07/2022	21:02	21:17	5	0	26
		22:47				
Re-entry	20/07/2022	03:42	05:13	6	1	19
		05:28				
Emergence	03/08/2022	20:36	20:51	3	1	20
		22:24				
Re-entry	04/08/2022	04:08	05:38	2	2	14
		05:53				
Emergence	15/09/2022	19:08	19:23	5	2	14
		20:53				
Re-entry	16/09/2022	05:44	06:44	3	1	9
		06:59				
Emergence	22/09/2022	18:53	19:08	8	0-1	18
		20:38				

2 Limitations

During the update Phase 1 Habitat survey, undertaken in April 2024, a new additional building was identified (B11), and a previously identified building/static caravan was noted as no longer present (B10).

Access for buildings inspections and emergence survey was not granted in 2024, and therefore surveys could not be updated. As the habitats onsite had not changed significantly, and externally the buildings did not appear to have changed significantly, it was considered appropriate to include the results of the 2014 and 2022 surveys to inform the emerging development proposals.

3 Results

The results of the building inspection are summarised in Table A13.3 and the results of the dusk emergence surveys are given in Table A13.4. Building locations and survey results are summarised in Figure A13.1.

Table A13.3 Results of preliminary roost inspection of buildings (refer to Figure A13.1 for locations)

Building reference	Building description	Potential Roost Features (PRFs)	Photograph	Suitability for roosting bats (Collins 2016)
1	Stone built bungalow and in-built garage with a pitched, concrete tiled roof. Internal loft spaces above garage and main house. Loft space is well used with lighting and no obvious access points.	PRF1 – Some gaps in soffit on northern elevation. PRF2 – Lifted tiles on all elevations including ridge tiles around southern chimney. PRF3 – Lead flashing around two chimneys.		Moderate
2	Brick built house with attached garage. Two gable roofs with, interlocking concrete tiles with a stone porch on south-eastern elevation and a sloping extension to the west. Extension roof is constructed of pan tiles. Roof lined with plastic underlay. No internal loft space.	PRF1 – Lifted ridge tiles. PRF2 – Lead flashing around two chimneys. PRF3 – Gaps in wooden fascia and eaves.		Moderate
3	Brick barn with two separate roof structures. The eastern roof is constructed of pan tiles, and the west is corrugated plastic.	PRF1 – Lifted ridge tiles along eastern roof. PRF2 - Access via gap under timber beam and missing guttering. PRF3 – Hole into building via western gable end.		Moderate

Table A13.3 Results of preliminary roost inspection of buildings (refer to Figure A13.1 for locations)

Building reference	Building description	Potential Roost Features (PRFs)	Photograph	Suitability for roosting bats (Collins 2016)
4	Brick barn with gabled pan tile roofing, and a garage extension to the south constructed of block and corrugated tin. There is a sloping roof to the east with a corrugated plastic roof.	PRF1 – Access via holes and windows in wall on eastern elevation. PRF2- Gaps under ridge tiles on eastern elevation and lifted roof tiles and holes in fascia on western elevation. PRF3- Gaps in mortar at SE corner above garage extension.		Moderate
5	A brick-built barn/calf rearing sheds with a sloping single pitch roof constructed of corrugated tin. Barn is open to the western aspect.	None recorded.		Negligible
6	Dutch barn with three extensions constructed of corrugated tin, wooden sleepers and block foundations. Sloping roof to the west, with corrugated metal extension to the north and east. Barns used for machinery storage, very open and drafty.	None recorded		Negligible

Table A13.3 Results of preliminary roost inspection of buildings (refer to Figure A13.1 for locations)

Building reference	Building description	Potential Roost Features (PRFs)	Photograph	Suitability for roosting bats (Collins 2016)
7	Wooden constructed barn with multi-gabled corrugated metal roof. Very open and drafty.	None recorded.		Negligible
8	Farm machinery and hay barn constructed of block and concrete framework and corrugated asbestos roof. Structure is open to the east and is very light and open.	PRF1- Wide gaps and overlapping asbestos gable trim on eastern and western elevation providing external access.		Previously recorded soprano pipistrelle confirmed roost (2014 surveys).
9	Corrugated metal hay barn with corrugated asbestos roof.	PRF1 – Corrugated asbestos under gable trim on eastern and western elevations (bats previously recorded emerging from western end).		Previously recorded soprano pipistrelle confirmed roost (2014 surveys).

Table A13.3 Results of preliminary roost inspection of buildings (refer to Figure A13.1 for locations)

Building reference	Building description	Potential Roost Features (PRFs)	Photograph	Suitability for roosting bats (Collins 2016)
10	Static caravan.	None recorded.		Negligible.
11	Wooden shed with corrugated sheet metal roof	None recorded.		Negligible.

Table A13.4: Dawn emergence / dawn re-entry survey results

Building	2014 results	2022 results
B1-B7	No roost recorded No evidence of roosting bats recording during emergence/re-entry surveys. Absence of species assumed.	No roost recorded No evidence of roosting bats recording during emergence/re-entry surveys. Absence of species assumed.
B8	Transitional roost - low numbers of soprano pipistrelles Three soprano pipistrelle bats recorded emerging from above the concrete beams.	Day roost – low numbers of common pipistrelle. Two common pipistrelles recorded emerging from asbestos roof/gable trim edge of building roof.
B9	Transitional roost - low numbers of soprano pipistrelles Three soprano pipistrelle bats recorded emerging and re-entering building through crevice in western gable end.	No roost recorded No evidence of roosting bats recording during emergence/re-entry surveys.

4 References

Bat Conservation Trust (2007). *Bat Surveys: Good Practice Guidelines*. The Bat Conservation Trust, London.

Collins J (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.

English Nature (2004) *Species Conservation Handbook*. English Nature, Peterborough.

Russ J (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing, Exeter.

Figure A13.1: Building Roost Survey Plan



Buildings 1-7

No roosts recorded. No evidence of roosting bats recorded during emergence/re-entry surveys in these buildings in the 2014 and 2022 surveys. Absence of species assumed.

B11

B2

B3

B4

B6

B5

B7

B8

B9

B1

Building 9

10.09.2014

Transitional roost for low numbers of soprano pipistrelles. At least three individuals recorded emerging from above concrete beams.

03.08.2022

No evidence of roosting bats recorded during emergence/re-entry surveys. Absence of species assumed.

Building 8

Day roost

Common pipistrelle

11.08.2014

Transitional roost for low numbers of soprano pipistrelles. At least three individuals recorded emerging and re-entering building through crevice in western gable end.

03.08.2022

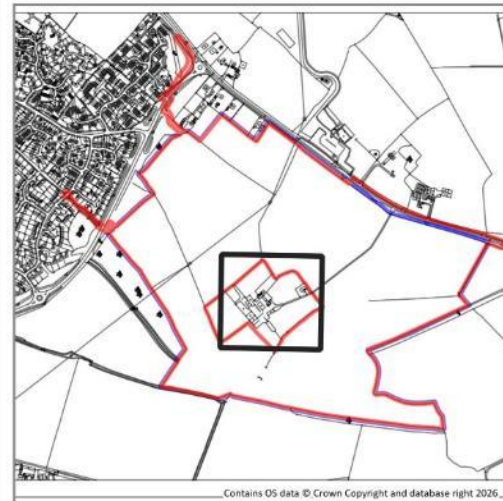
Two common pipistrelles recorded emerging from western aspect of asbestos roof/gable trim edge of at 21:39 and 21:41.

Emergence location of two common pipistrelles during 2022 emergence survey.

0 10 20 m

Key

- Building - confirmed roost (2022)
- Building - confirmed roost (2014)
- Building - moderate bat roost suitability
- Building - negligible bat roost suitability
- Emergence location



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Gleeson Land

Forest Farm, Chippenham

Building Roost Survey Plan

25/06/2026

Created by: EG

Scale at A3 1:800

Appendix 14: Bat Roost Survey Plan (trees)

Bat roost surveys of trees

1 Methodology

Ground Level Tree Assessment

A preliminary tree assessment of all trees within the Survey Area was undertaken on the 08 April 2022 following BCT guidelines available at the time (Collins 2026) to assess their potential to support roosting bats (i.e. the presence of Potential Roost Features; PRF). An update Ground Level Tree Assessment (GLTA) was then undertaken on 04 April 2024 following updated survey guidance (Collins 2023). Trees were categorised according to BCT guidelines available at the time of the surveys (Collins 2016 & Collins 2023; refer to Table A14.1 below). As categorizations changed with the update BCT guidelines issued in 2023, roost features are categorised in this report as either PRF-I or PRF-M, as per the 2023 guidelines, although the results of emergence surveys from 2022 have been included within the results section.

Table A14.1 Guidelines for assessing the potential suitability of PRFs on a proposed development sites for bats (adapted from Collins [ed.] 2023).

Suitability	Description of roosting habitats
PRF-I	PRF is only suitable for individual bats or very small numbers either due to size or lack of suitable habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

The suitability of a PRF at the GLTA stage is only indicative. According to survey guidance (BCT 2023), all ‘impacted’ trees identified by the GLTA that have bat roost suitability should undergo a detailed aerial inspection (using climbing equipment), where safety permits. Following this detailed inspection, the potential roost features can be re-categorised. Trees confirmed as ‘PRF-I’ (suitable for very small numbers of roosting bats) require no further surveys. Trees confirmed as ‘PRF-M’ (suitable for multiple roosting bats and potentially used by a maternity colony) require two further surveys. Any trees deemed unsafe for an aerial inspection or unsuitable for climbing should be subject to dusk-emergence surveys using night-vision aids (NVAs).

Aerial inspection survey and dusk emergence surveys

During the 2024 GLTA, 46 trees onsite were categorised as PRF-M (Potential Roost Features were present, which were suitable for multiple bats and may therefore be used by a maternity colony), of which 22 were considered may be directly / indirectly impacted by the current development proposals. These 22 trees were subject to further survey; aerial inspections were undertaken of the 14 trees considered safe to climb, and the eight which were considered unsafe for climbing were subject to dusk emergence survey.

Aerial inspection was conducted by two qualified surveyors using ladders and/or roped climbing technique on 03 June 2024, 19 June 2024 and 04 July 2024. The aerial inspections recorded the characteristics of PRFs identified in the GLTA and re-categorised their suitability. PRF inspections were carried out using a combination of torch/ endoscope inspections, tree climbing, ladders and pole mounted endoscopes, where appropriate. The PRFs were inspected for bats in situ and field-signs that could indicate previous use by bats (droppings, staining, corpses, bat fly cases); or the potential for the PRF to be used by bats were recorded. The latter included an appraisal of the PRF shape, internal environment and drop zone, all of which influence the likelihood that bats would roost in the PRF at any point during the year.

The eight trees that were subject to three dusk-emergence surveys involved the use of surveyors and Night Vision Aids (NVAs; Infra-Red or thermal imaging cameras) to determine roost presence/likely absence. The dusk surveys commenced 15 minutes before sunset and continued for up to 120 minutes after sunset.

Surveyors and/or NVAs were located in predetermined positions around the trees to observe suitable bat access features. Surveyors were equipped with broadband bat detectors (Anabat Scout) to record any echolocation calls ('registrations') for subsequent analysis. NVA recordings were subsequently analysed to determine roost presence/likely absence.

Weather conditions recorded during the emergence surveys in 2022 and 2024 are given in Table A14.2.

Table A14.2: Weather conditions during emergence surveys (2022 & 2024)

Date	Start/end time	Sunset	Cloud (Oktas)	Wind speed (Beaufort)	Temperature (C)
2022 surveys					
19/07/2022	21:02	21:17	4	1-2	23
	22:47		5	2-3	21
20/07/2022	03:45	05:28	0	0	21
	05:13		0	0	18
03/08/2022	20:38	20:53	0	1	23
	22:23		0	1	20
15/08/202	20:17	20:32	4	0	21
	22:02		7	0-1	19
22/08/2022	20:01	20:16	7	2	20
	22:46		7	2	18
23/08/2022	04:36	06:06	8	0	18
	06:21		4	0	17
06/09/2022	19:28	19:43	6	2	18
	21:13		7	2	15
09/09/2022	19:23	19:38	6	2	18
	21:08		7	1	15
15/09/2022	19:08	19:23	4	3-4	14
	20:53		2	2-3	13
16/09/2022	05:14	06:44	2	1	8
	06:59		1	0	7
22/09/2022	18:53	19:08	8	0	18
	20:38		8	0	16
23/09/2022	05:25	06:55	8	0	14
	07:10		8	0	14
2024 surveys					
24/06/2024	21:09	21:24	0	1	19
	22:54		0	1	16
29/07/2024	20:45	21:00	1	0	22
	22:30		1	0	19
28/08/2024	19:47	20:02	7	1	19
	21:32		4	1	16

2 Limitations

There were no significant limitations to the surveys.

3 Results

Ground Level Tree Assessment

The 22 trees which were identified in 2024 as potentially impacted by the development proposals and also considered to have features suitable for roosting bats were subject to further survey. The results of the tree assessment are provided in Table A14.3; refer to Figure A14.1 for locations. All trees onsite were surveyed but only those with features suitable for roosting bats and which may potentially impacted by the development proposals which are included within Table A14.3. As the development proposals evolved between surveys undertaken in 2022 and 2024, additional trees were scoped into the 2024 surveys. As a result, trees 36 to 43 were only subject to further survey in 2024.

Table A14.3 Ground Level Tree Assessment results

Tree	Species	Description of tree and potential roost features (PRFs)	2024 GLTA roost suitability categorization	Further survey undertaken in 2022	Further survey undertaken in 2024
1	Oak	Single stem mature oak. PRF - Crevice in trunk at broken branch.	PRF-M	Emergence /re-entry survey	Aerial inspection survey
2	Oak	Mature single stem some dead branches. PRFs - Dead branch, broken branch with holes into trunk, dead branch with crack.	PRF-M	Emergence /re-entry survey	Aerial inspection survey
3	Oak	Mature Y shape some dead branches. PRF - lifted bark .	PRF-M	Emergence /re-entry survey	Emergence /re-entry survey
4	Oak	Single stem mature oak. PRF – 2 dead branches with holes.	PRF-M	Emergence /re-entry survey	Aerial inspection survey
5	Oak	Single stem mature oak. PRF – 2 holes in dead branch.	PRF-M	Emergence /re-entry survey	Aerial inspection survey
26	Oak	Dying mature oak. PRFs - multiple holes and knot holes in branches, hollowing and hole in trunk.	PRF-M	Emergence /re-entry survey	Emergence /re-entry survey
27	Oak	Mature single stem oak. PRF – knot holes	PRF-M	Emergence /re-entry survey	Aerial inspection survey
29	Oak	Dead mature oak. PRFs - knot holes.	PRF-M	Emergence /re-entry survey	Aerial inspection survey
30	Oak	2 oaks, PRF on most southerly. PRF - Hole in crack on branch.	PRF-M	Emergence /re-entry survey	Aerial inspection survey
31	Oak	Dead tree. PRF - holes and cracks all over	PRF-M	Emergence /re-entry survey	Emergence /re-entry survey
32	Oak	Mature single stem. PRF - 3-4 dead branches	PRF-M	Emergence /re-entry survey	Aerial inspection survey

Table A14.3 Ground Level Tree Assessment results

Tree	Species	Description of tree and potential roost features (PRFs)	2024 GLTA roost suitability categorization	Further survey undertaken in 2022	Further survey undertaken in 2024
33	Oak	Mature single stem oak. PRF - large crack in branch	PRF-M	Emergence /re-entry survey	Emergence /re-entry survey
34	Oak	Mature single stem. PRFs - woodpecker hole, crack/hole	PRF-M	Emergence /re-entry survey	Emergence /re-entry survey
35	Oak	Mature single stem. PRF - cracks and holes on both sides	PRF-M	Emergence /re-entry survey	Emergence /re-entry survey
36	Oak	Mature single stem. PRF – Hole in branch	PRF-M	No survey undertaken	Emergence /re-entry survey
37	Oak	Mature single stem. PRF - Knot hole in branch	PRF-M	No survey undertaken	Aerial inspection survey
38	Oak	Mature single stem. PRF – 3x knot holes	PRF-M	No survey undertaken	Aerial inspection survey
39	Oak	Mature single stem. PRF - Knot hole in branch.	PRF-M	No survey undertaken	Aerial inspection survey
40	Ash	Mature single stem. PRF – Woodpecker hole	PRF-M	No survey undertaken	Emergence /re-entry survey
41	Ash	Two mature single stem ash trees adjacent to each other. PRF - Woodpecker hole on main trunk on western most tree, hole in trunk cavity on eastern tree, knot hole in branch.	PRF-M	No survey undertaken	Emergence /re-entry survey
42	Ash	Mature single stem. PRF - Knot hole on main trunk	PRF-M	No survey undertaken	Aerial inspection survey
43	Oak	Mature single stem. PRF - Knot holed on main trunk	PRF-M	No survey undertaken	Aerial inspection survey

Aerial Inspection survey and emergence/re-entry survey

The results of the further surveys of trees (aerial inspection and/or emergence/re-entry surveys) are provided in Table A14.4.

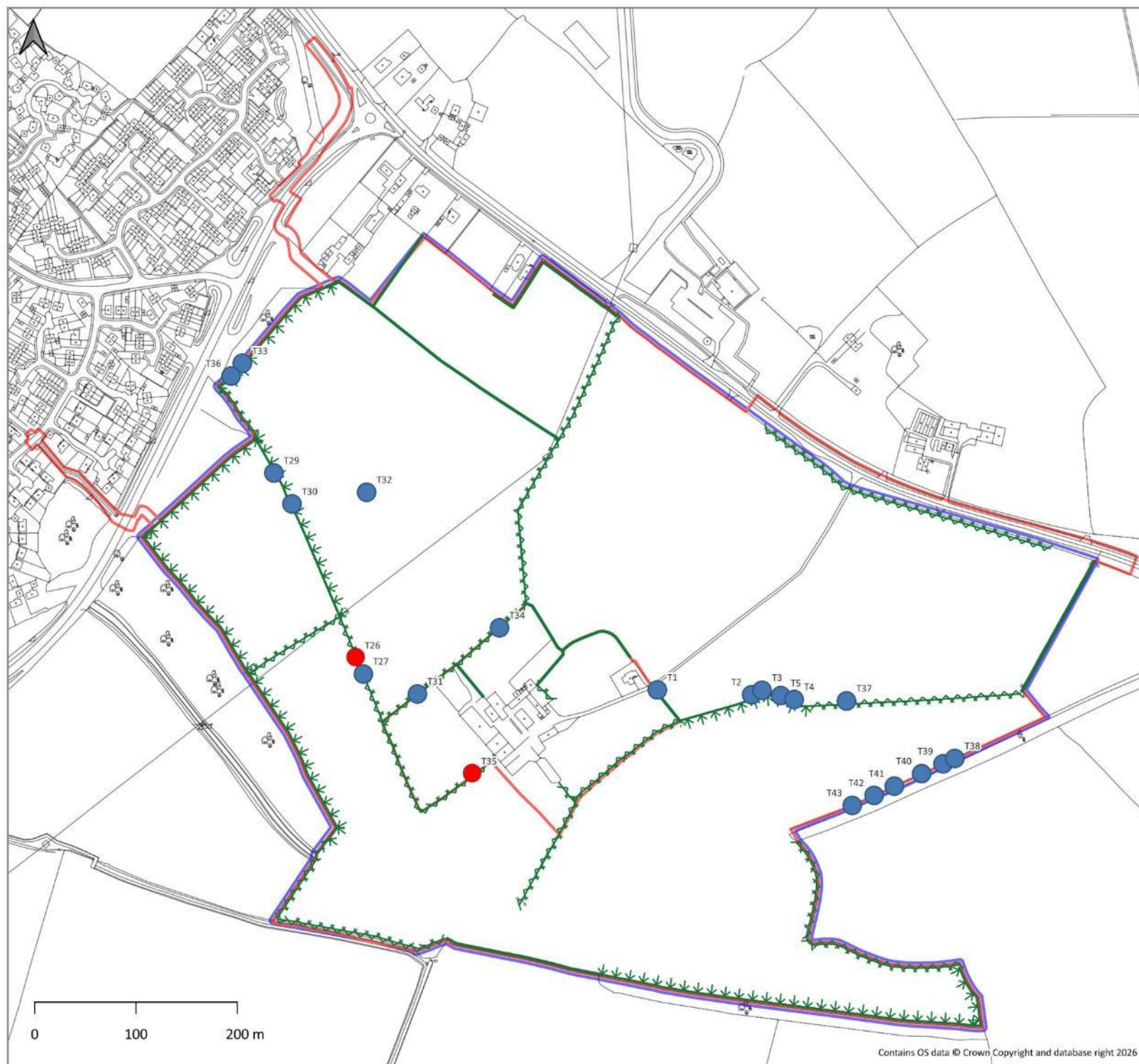
No evidence of roosting bats was recording during the aerial inspection surveys, however the following pipistrelle bat day roosts were recorded during emergence/re-entry surveys:

- Tree 26: up to two pipistrelle bats recorded emerging/re-entering a knot hole in 2022 and 2024.
- Tree 35: two pipistrelle bats recorded emerging in 2022.

Table A14.4: Results of further surveys of trees in 2022 and 2024

Tree	2022 further survey result	2024 further survey result
1	No bats recorded during emergence/re-entry surveys	No evidence of roosting bats recorded during aerial inspections.
2	No bats recorded during emergence/re-entry surveys	No evidence of roosting bats recorded during aerial inspections.
3	No bats recorded during emergence/re-entry surveys	No bats recorded during emergence/re-entry surveys
4	No bats recorded during emergence/re-entry survey	No evidence of roosting bats recorded during aerial inspections.
5	No bats recorded during emergence/re-entry surveys	No evidence of roosting bats recorded during aerial inspections.
26	1 re-entry (20.07.22) and 1 emergence (22.09.22) of single pipistrelle bat from knot hole facing SW.	Two soprano pipistrelle bats observed emerging from knot hole feature on 29.07.2024 and 28.08.24.
27	No bats recorded during emergence/re-entry surveys	No evidence of roosting bats recorded during aerial inspections.
29	No bats recorded during emergence/re-entry surveys	No evidence of roosting bats recorded during aerial inspections.
30	No bats recorded during emergence/re-entry surveys	No evidence of roosting bats recorded during aerial inspections.
31	No bats recorded during emergence/re-entry surveys	No bats recorded during emergence/re-entry survey
32	No bats recorded during emergence/re-entry surveys	No evidence of roosting bats recorded during aerial inspections.
33	No bats recorded during emergence/re-entry surveys	No bats recorded during emergence/re-entry surveys
34	No bats recorded during emergence/re-entry survey	No bats recorded during emergence/re-entry surveys
35	No bats recorded during emergence/re-entry survey	No bats recorded during emergence/re-entry surveys
36	No survey undertaken in 2022	No bats recorded during emergence/re-entry surveys
37	No survey undertaken in 2022	No evidence of roosting bats recorded during aerial inspections.
38	No survey undertaken in 2022	No evidence of roosting bats recorded during aerial inspections.
39	No survey undertaken in 2022	No evidence of roosting bats recorded during aerial inspections.
40	No survey undertaken in 2022	No bats recorded during emergence/re-entry survey
41	No survey undertaken in 2022	No bats recorded during emergence/re-entry survey
42	No survey undertaken in 2022	No evidence of roosting bats recorded during aerial inspections.
43	No survey undertaken in 2022	No evidence of roosting bats recorded during aerial inspections.

Figure A14.1: Ground Level Tree Assessment Plan



Key

- Site boundary
- Survey boundary
- Species-poor hedgerow
- Species-rich hedgerow
- Species-rich hedgerow with trees
- High roost suitability - PRF M
[Note: T26 confirmed roost during emergence survey in 2024 and T35 previously confirmed roost during emergence survey in 2022]
- Moderate roost suitability - PRF M

Appendix 15: Otter and Water Vole Survey

Otter and water vole survey

1 Methodology

An otter and water vole survey of the watercourse within the Survey Area was undertaken on 21 April 2022, 04 October 2022, 17 April 2024 and 21 June 2024; refer to Figure A15.1. The otter survey followed standard guidelines (NRA, 1993), which involved recording signs of otter activity including prints, tail slides, feeding signs, spraint and potential places of refuge. The water vole survey followed standard methodology (The Mammal Society, 2016), which involved recording signs of water voles including burrows, latrines and feeding remains.

2 Limitations

There were no limitations to the surveys.

3 Results

No evidence of otter or water vole was recorded during any of the survey visits.

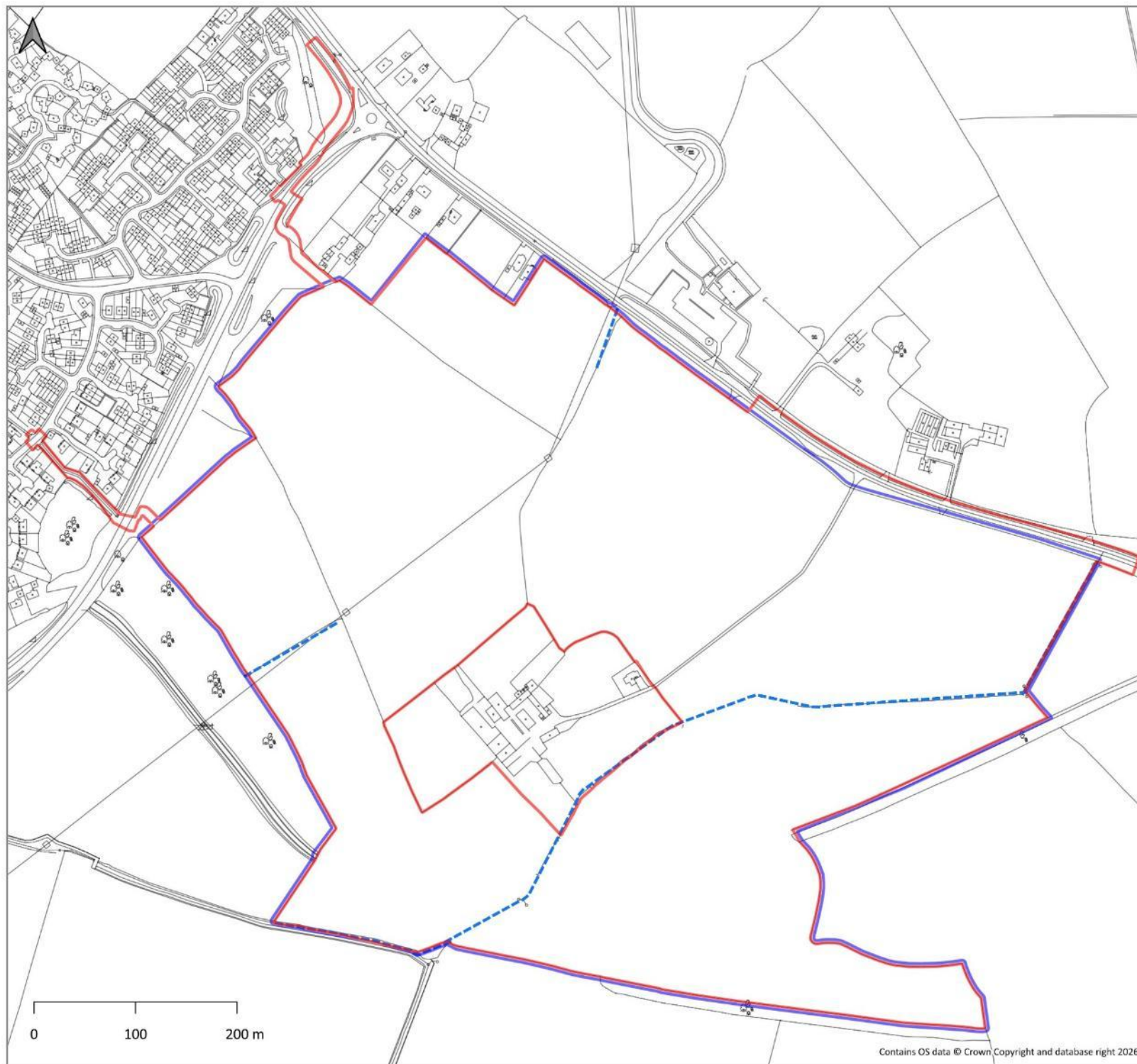
4 References

Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

National Rivers Authority (1993) *Otters and River Habitat Management*. Conservation Technical Handbook Number 3.

Strachan & Moorhouse (2011) *Water Vole Conservation Handbook*. 3rd Edition. WildCRU, Oxford.

Figure A15.1: Otter and Water Vole Survey Plan



Key

- Site boundary
- Survey boundary
- - - Watercourses surveyed

0 100 200 m

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ead
ecology
www.eadecology.co.uk

Gleeson Land

Forest Farm, Chippenham

Otter and Watervole Survey Plan

25/06/2026

Created by: EG

Scale at A3 1:3,600

Appendix 16: Biodiversity Net Gain Assessment

Biodiversity Net Gain Assessment

1 Methodology

A biodiversity net gain (BNG) assessment of the outline development proposals was undertaken to quantify the estimated net change in biodiversity resulting from the proposed development. The assessment utilised the Defra Statutory Metric calculation tool (Defra, 2025a), with reference to supporting documents (Defra 2026 and 2025b). The completed metric has been provided as a digital file (Excel spreadsheet).

In line with Statutory BNG Guidance (Defra 2026), the assessment has been undertaken with reference to the Biodiversity Metric principles (Defra 2026). As the application is at outline stage, the calculations are based on an Illustrative Landscape and Ecology Strategy (EDP, 2026; drawing reference: edp7351_d011j); further assessment would be undertaken to assess detailed designs provided as part of subsequent Reserved Matters applications to inform discharge of a Biodiversity Gain Plan pre-commencement.

Pre-development habitats

The onsite habitat, watercourse and hedgerow baseline was informed by a Habitat Condition Assessment (HCA) survey undertaken by an experienced ecologist from EAD Ecology on 13 May 2024 and updated in July 2025. These assessments followed Defra Statutory Metric methodologies, also referencing the relevant supporting documents (Defra 2026 and 2025b). Due to changes to the red line boundary at the locations of the proposed cycle/pedestrian routes in the west and northwest of the site, it was not possible to complete full HCA surveys of the woodland in these areas; aerial imagery was used to supplement the assessment and a precautionary approach to baseline condition of habitats was applied where it wasn't possible to assess the condition of a particular habitat parcel.

The watercourse component of the metric was informed by a River Condition Assessment which comprised two components; a field survey and desk study. The field survey element was undertaken on 13 May 2024 by a Modular River Survey accredited ecologist in accordance with the MoRPh survey methodology (Shuker et al. 2017). The field survey recorded the morphology, sediments, physical features and vegetation structure of the onsite watercourse and margins within 10m of the bank top. The watercourse was sub-divided into MoRPh5 sub-reaches¹⁴ to cover an area of at least 20% of the watercourse within the Site boundary, with each MoRPh5 sub-reach comprising five MoRPh modules¹⁵. The desk study was undertaken using Google Earth Pro and Defra MAGIC maps to measure the planform, confinement and valley gradient of an extended reach¹⁶ encompassing the project area to determine the River Type. Survey results acquired from the field survey and desk study were inputted into a MoRPh Pro Information System (Cartographer) to generate a Final Condition Score which was input within the metric. The Final Condition Score was then adjusted, where necessary, to account for over-deepening.

Habitat area measurements

Measurements of both pre-development and post-development habitats were undertaken with QGIS using the Biodiversity Metric QGIS Import Tool, and then incorporated into the Metric using the DEFRA Statutory Metric GIS Import Tool (Natural England, 2023). Areas for individual trees were calculated in accordance with guidance (Defra, 2026), using the integrated Statutory Metric Tree Helper.

¹⁴ MoRPh5 sub-reach are defined as a short river reach with a length equal to 5 MoRPh modules (approximately 10 channel widths in length).

¹⁵ MoRPh Module is defined as a short length of river (approximately two channel widths in length) along which a single MoRPh survey is conducted.

¹⁶ Reach is defined as a section of river along which boundary conditions are sufficiently uniform that the river maintains a near consistent internal set of processes-form interactions.

Onsite post-development habitats

Post-development onsite habitat areas are based on the Illustrative Landscape and Ecology Strategy (refer to Figure A16.2) prepared for the planning application. This represents the results of an iterative process to maximise onsite biodiversity value in accordance with the mitigation hierarchy, the biodiversity gain hierarchy and the biodiversity net gain good practice principles (CIEEM, CIRIA and IEMA, 2016), considering all other layout constraints.

Determination of expected post-development onsite habitat conditions are based on the relevant habitat condition criteria in the Statutory Metric (Defra 2025b). Post-development river condition score was generated through Cartographer by running a scenario based on the Illustrative Landscape and Ecology Strategy. The interventions proposed to achieve the conditions specified in the Metric are detailed in Tables A16.8 – A16.9. In the professional opinion of EAD Ecology, all measures and targeted habitat conditions are considered realistic and achievable and assume the implementation of a Biodiversity Gain Plan, including a Habitat Management and Monitoring Plan (HMMP) detailing the establishment requirements for habitats and long-term management of retained, enhanced and created habitats. The HMMP would be produced in accordance with the Natural England Habitat Management and Monitoring Plan Template (JP058) and companion document.

The illustrative development proposals do not currently detail the landscaping in the cycle/pedestrian routes in the west and northwest of the site, and the woodland was not assessed during the HCA survey, so a precautionary approach to the BNG assessment of this area was undertaken.

Strategic Significance / Delivery

The strategic significance of both baseline and post-construction habitats applied to the Metric have been assigned in accordance with the Statutory Biodiversity Metric guidance (Natural England 2026), with reference to site-specific information. The Site is within an area currently covered by a Local Nature Recovery Strategy (Wiltshire and Swindon LNRS), therefore the strategic significance has been assigned with reference to Table 7 within the Statutory Biodiversity Metric guidance (Natural England 2026).

The watercourse within the Site falls within the mapped measure for 'Rivers, streams and wetlands', within the Wiltshire and Swindon LNRS, however, the proposed habitat interventions are not considered to align with the detailed measures. Therefore, all baseline and proposed habitats have been assigned low strategic significance.

Assumptions

The following assumptions were made to inform the BNG assessment:

- Residential parcels were assessed as developed land; sealed surface and vegetated gardens (70:30 split; in the absence of detail).
- The installation of a pedestrian crossing (open span bridge) over ditch D1 was assumed to reduce the habitat condition to 'Poor' in this location.
- Proposed trees indicated within proposed hedgerows or within parcels of proposed native scrub on the illustrative landscape plan have been excluded from the BNG calculation.
- Baseline habitats in the areas of the proposed pedestrian/cycle paths in the west and northwest of the site were not fully surveyed due to late changes to the red line boundary in these areas. Where an HCA was not completed, aerial imagery, online habitat information, and adjacent habitat condition assessment data was used to classify habitats, where available. If there was no HCA data, a precautionary approach to assigning the condition of the habitat was taken.
- Appropriate Site tests, such as hydrological assessment and soil analyses, would be required to inform and confirm the feasibility of proposed habitat creation/enhancement measures.

2 Biodiversity Net Gain

The pre-development biodiversity value of the Site was calculated as 83.22 'Habitat Units', 77.94 'Hedgerow Units', and 8.19 'Watercourse Units'; refer to Table A16.1 and Figure A16.1.

The post-development biodiversity value of the Site, based on Figure A16.2, is predicted as 114.43 'Habitat Units', 95.55 'Hedgerow Units', and 8.90 'Watercourse Units'. The proposed development would therefore, have potential to demonstrate a net gain of 31.12 Habitat Units (+37.35%), a net gain of 22.59 Hedgerow Units (+17.61%) and a net gain of 0.71 Watercourse Units (+8.68%); refer to Table A16.1 and Figures A16.1 – A16.2.

The areas and conditions of the baseline habitats, hedgerows and watercourse currently located on the Site are provided in Tables A16.3 – A16.6. The indicative post-construction Site habitat creation/enhancement' Biodiversity Units for habitats, hedgerows and watercourse are provided in Tables A16.7 – A16.8.

Table A16.1: BNG Metric Summary¹⁷

Onsite baseline pre-development	Habitat units	83.32
	Hedgerow units	77.94
	Watercourse units	8.19
Onsite post-development (Habitat retention, creation & enhancement)	Habitat units	114.43
	Hedgerow units	95.55
	Watercourse units	8.90
Net change (Habitat retention, creation & enhancement)	Habitat units	+31.12 (+37.35%)
	Hedgerow units	+17.61(+2 2.59%)
	Watercourse units	+0.71 (+8.68%)

Irreplaceable habitats

No irreplaceable habitats were identified onsite that would be directly affected/ lost by the proposed development. Two veteran trees were identified within the Site (T21 and T26; refer to Table F16.6), these trees are retained.

Additionality

In accordance with current guidance, mitigation or compensation for impacts to Special Areas of Conservation (SAC) / Special Protection Areas (SPA) / European Protected Species (EPS)/ further listed schemes (FLS) can be used 'in part' towards achieving Biodiversity Net Gain. This means that at least 10% of the development's biodiversity units must be related to habitat proposals not providing SAC/SPA/EPS/FLS mitigation/compensation (i.e. SAC mitigation/compensation can contribute up to the point of no net loss). No mitigation/compensation for SAC/SPA/EPS/FLS were proposed within the Site, therefore there are no additionality concerns with this assessment.

Trading rules

Where the above on-site habitat delivery is applied, all 'Trading rule' requirements specified in the Statutory Metric would be met for 'Hedgerow Units' and 'Watercourse Units' but fails for Habitats due to a small loss of High distinctiveness, lowland mixed deciduous woodland, in the west of the site where a

¹⁷ Headline figures reflect metric outputs which include built in rounding to two decimal places.

pedestrian/cycle route is proposed. The illustrative development proposals do not currently detail the landscaping in the cycle/pedestrian routes in the west of the site, and the woodland HCA was limited, so a precautionary approach to the BNG assessment of this area was undertaken. It is considered possible that detailed design measures could avoid impacts to the High distinctiveness woodland in this area, and thus satisfy BNG trading rules for Habitats. If not, the deficit would be addressed via additional creation of woodland units onsite or through offsite offsetting.

3 Biodiversity Net Gain Strategy

Onsite Habitat Delivery

The HMMPs will include detailed habitat establishment methods and programme, proposed management activities which can be implemented for a 30-year period and a detailed work programme to ensure successful establishment/restoration of habitat, together with details of monitoring to evaluate the success of ongoing management activities and provide regular condition reporting to Wiltshire Council. The extent and frequency of monitoring reporting will be agreed with Wiltshire Council.

Offsite Offsetting

If the detailed development design and landscape proposals cannot deliver the additional watercourse units required to remove the 0.11 deficit in watercourse units that is currently predicted, additional watercourse units will be provided offsite or purchased from a third party. Similarly, if the habitat unit trading rules cannot be satisfied through onsite detailed design, High distinctiveness woodland habitat units will be provided offsite or purchased from a third party.

4 Conclusions

The Biodiversity Net Gain calculations based on the Illustrative Landscape and Ecology Strategy (Figure 4) demonstrates that the development is expected to deliver net gain onsite for habitats, hedgerows and watercourses. The Biodiversity Net Gain calculations based on the Illustrative Landscape Strategy demonstrate that the proposed development would be predicted to deliver a net gain of +37.35% in Habitat Units, a net gain of +22.59% in Hedgerow Units, and a net gain of +8.68% in Watercourse Units.

As this BNG Assessment is based upon an Illustrative Landscape and Ecology Strategy, an updated BNG Assessments will need to be undertaken based on detailed landscape design to inform preparation of a Biodiversity Gain Plan and enable discharge of the Biodiversity Gain Condition.

5 References

CIEEM, CIRIA and IEMA (2016) Biodiversity Net Gain Good practice principles for development <https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf>

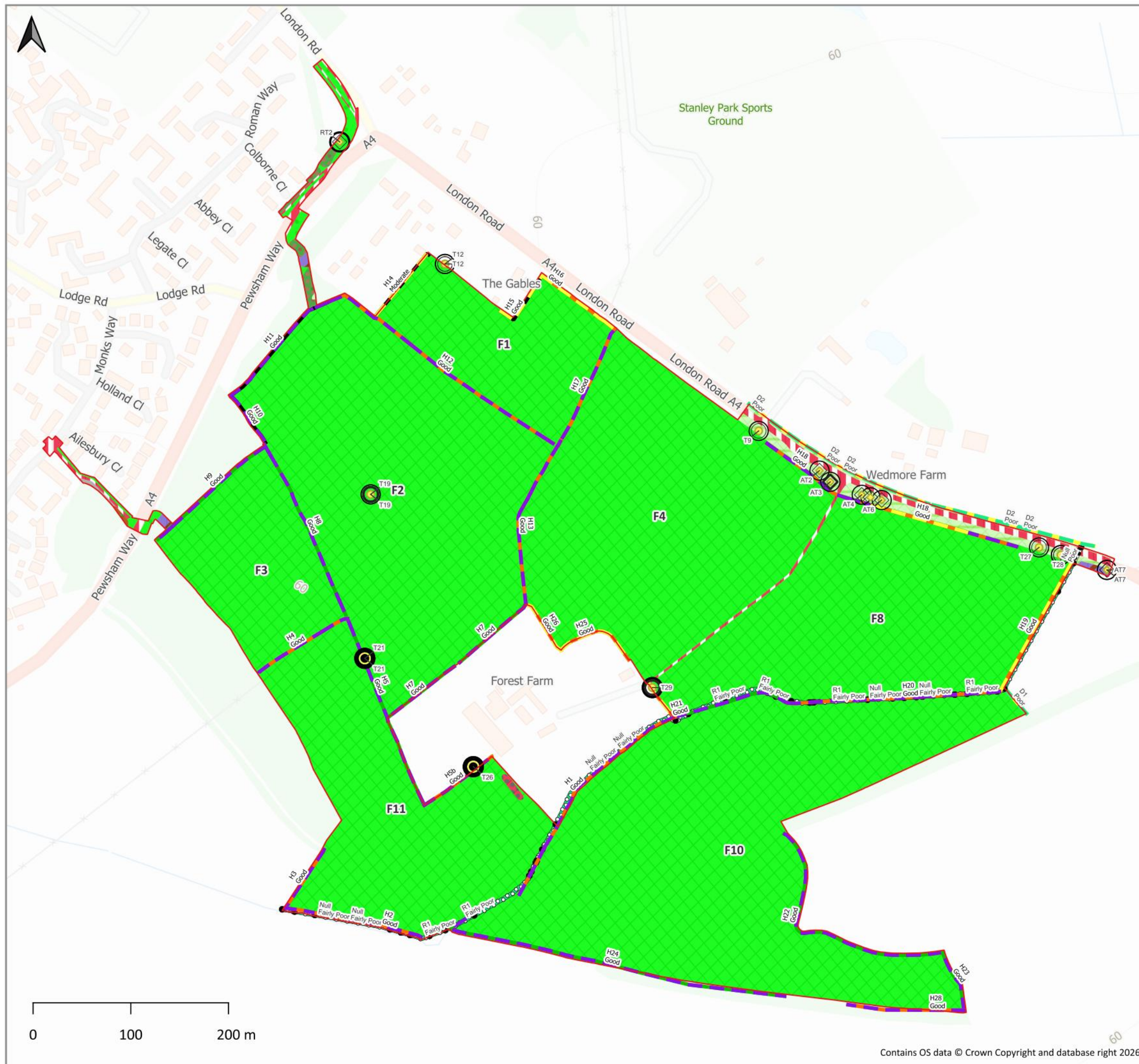
Defra (2025a). The Statutory Biodiversity Metric Auditing and accounting for biodiversity calculation tool. July 2025.

Defra (2026). The Statutory Biodiversity Metric User Guide. June 2026.

Defra (2026). The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology. January 2025.

Natural England (2023). Biodiversity Metric. GIS Import Tool. ISBN: 978-1-7393362-5-7. November 2023.

**Figure A16.1: Pre-development (Baseline) Habitat
Condition Assessment Plan**



Key

Site boundary

Individual Trees

Existing Very Large Rural Tree

Existing Large Urban Tree

Existing Large Rural Tree

Existing Medium Urban Tree

Existing Medium Rural Tree

Individual tree Condition

Moderate

Good

Hedgerows

Native hedgerow

Native hedgerow - associated with bank or ditch

Species-rich native hedgerow

Species-rich native hedgerow - associated with bank or ditch

Species-rich native hedgerow with trees - associated with bank or ditch

Watercourses

Culvert

Ditches

Other rivers and streams

Habitats

Bramble scrub

Developed land; sealed surface

Lowland mixed deciduous woodland

Modified grassland

Other neutral grassland

Other woodland; broadleaved

Tall forbs

Bare ground

Baseline Habitats Condition

Good

Moderate

Poor

N/A - Other

Condition Assessment N/A

**Figure A16.2: Post-development Metric Habitat
Retention, Creation and Enhancement Plan**



Gleeson Land			
Land at Forest Farm, Chippenham			
Biodiversity Net Gain Assessment: Post-intervention Plan			
30/06/2026	Created by: LS	Scale at A3 1:3,750	

Table A16.3 Baseline Habitat Condition Assessment Results

Habitat type	Reference code	Condition assessment results
Grassland - Modified grassland	F1, F2, F3, F4, F8, F10, F11	Poor condition • Fails condition criteria A – average of less than six species recorded per metre square. • Fails condition criteria B – sward height not varied. • Passes condition criteria C – no scattered scrub present in grassland. • Passes condition criteria D – physical damage present on less than 5% of grassland. • Fails condition criteria E – bare ground coverage was low (c.1%). • Passes condition criteria F – no bracken recorded. • Passes condition criteria G – no invasive species recorded and cover of undesirable species was less than 5%. Fails essential criteria A therefore 'Poor' condition.
Grassland – Other neutral grassland	G1	Poor condition • Fails condition criteria A – grassland not considered to be a good representation of this habitat type. • Fails condition criteria B – sward height not varied. • Passes condition criteria C – cover of bare ground was considered to be between 1-5%. • Fails condition criteria D – cover of scrub was greater than 5%. • Fails condition criteria E –sub-optimal species and physical damage account for greater than 5% of the area. • Passes condition criteria F – less than 10 species per square metre present however criteria passed on pre-cautionary basis given time of year. Fails essential criteria A therefore 'Poor' condition.
Grassland – Other neutral grassland	G2	Poor condition • Fails condition criteria A – grassland not considered to be a good representation of this habitat type. • Fails condition criteria B – sward height not varied. • Passes condition criteria C – cover of bare ground was considered to be between 1-5%. • Passes condition criteria D – cover of scrub was less than 5% and cover of bracken was less than 20%. • Fails condition criteria E –sub-optimal species and physical damage account for greater than 5% of the area. • Passes condition criteria F – less than 10 species per square metre present however criteria passed on pre-cautionary basis given time of year. Fails essential criteria A therefore 'Poor' condition.
Urban – Bare ground	B1	Poor condition • Fails condition criteria A – vegetation structure not varied and a single ecotone occupies greater than 80%. Of the total area.

Habitat type	Reference code	Condition assessment results
		• Fails condition criteria B – habitat parcel does not contain plant species that are beneficial to wildlife. • Passes condition criteria C – invasive non-native plant species and those of detriment to native wildlife cover less than 5% of the total vegetated area.
Urban – Developed land; sealed surface	U1	N/A – Other Condition assessment not applicable.

Table A16.3 Baseline Hedgerow Condition Assessment Results

Hedge no.	Condition Assessment Criteria (P = Pass: F = Fail)								Hedge with trees (Y = Yes: N = No)	Hedgerows with trees only		Bank or ditch	Sp. rich	Condition
	A1. Height (>1.5m average)	A2. Width (>1.5m average)	B1. Gap hedge base (<0.5m average for >90% length)	B2. Canopy gaps (<10%, no gaps >5m)	C1. Undisturbed ground (>1m width for >90%; at least 1 side)	C2. Undesirable vegetation (nettle, cleaver, dock <20%)	D1. Invasives/ non-natives (<10%)	D2. Damage (<10%)		E1. Tree class (>1 age class)	E2. Tree health (>95% free from disease/damage)			
1	P	P	P	P	P	P	P	P	N	N/A	N/A	Y	Y	G
2	P	P	P	P	P	F	P	P	N	N/A	N/A	Y	Y	G
3	P	P	P	P	P	P	P	P	N	N/A	N/A	Y	Y	G
4	P	P	P	P	P	P	P	P	N	N/A	N/A	Y	Y	G
5	P	P	P	P	P	P	P	P	Y	F	P	Y	Y	G
7	P	P	P	P	P	F	P	P	Y	F	P	Y	Y	G
8	P	P	P	P	P	P	P	P	Y	F	P	Y	Y	G
9	P	P	P	P	P	F	P	P	Y	F	P	Y	Y	G
10	P	P	P	P	P	P	P	P	N	N/A	N/A	N	Y	G
11	P	P	P	P	P	P	P	P	N	N/A	N/A	N	Y	G
12	P	P	P	P	P	P	P	P	N	N/A	N/A	Y	Y	G
13	P	P	P	P	P	P	P	P	N	N/A	N/A	Y	Y	G
14	P	P	F	F	P	P	F	P	N	N/A	N/A	N	N	M
15	P	P	P	P	P	P	P	P	N	N/A	N/A	N	N	G
16	P	P	P	P	P	P	P	P	N	N/A	N/A	Y	N	G
17	P	P	P	P	P	P	P	P	N	N/A	N/A	Y	Y	G
18	P	P	P	P	P	F	P	P	N	N/A	N/A	Y	N	G
19	P	P	P	P	P	F	P	P	N	N/A	N/A	Y	N	G
20	P	P	P	P	P	F	P	P	N	N/A	N/A	Y	N	G
21	P	P	P	P	P	F	P	P	Y	P	F	Y	Y	G
22	P	P	P	P	P	P	P	P	Y	P	P	Y	Y	G
23	P	P	P	F	P	P	P	P	Y	P	P	Y	Y	G

Table A16.3 Baseline Hedgerow Condition Assessment Results

Hedge no.	Condition Assessment Criteria (P = Pass: F = Fail)								Hedge with trees (Y = Yes: N = No)	Hedgerows with trees only		Bank or ditch	Sp. rich	Condition
	A1. Height (>1.5m average)	A2. Width (>1.5m average)	B1. Gap hedge base (<0.5m average for >90% length)	B2. Canopy gaps (<10%, no gaps >5m)	C1. Undisturbed ground (>1m width for >90%; at least 1 side)	C2. Undesirable vegetation (nettle, cleaver, dock <20%)	D1. Invasives/ non-natives (<10%)	D2. Damage (<10%)		E1. Tree class (>1 age class)	E2. Tree health (>95% free from disease/damage)			
24	P	P	P	P	P	F	P	P	Y	F	P	Y	Y	G
25	P	P	P	P	P	F	P	P	N	N/A	N/A	Y	N	G
26	P	P	P	P	P	F	P	P	N	N/A	N/A	Y	N	G
27	P	P	F	P	P	F	P	P	N	N/A	N/A	Y	N	G
28	P	P	F	P	P	F	P	P	N	N/A	N/A	Y	Y	G

Table A16.4. Summary of River Condition Assessment (RCA).

Morph5	1	2	3	4
River name	Unnamed watercourse	Unnamed watercourse	Unnamed watercourse	Unnamed watercourse
Reach name	Chippenham, Forest Farm	Chippenham, Forest Farm	Chippenham, Forest Farm	Chippenham, Forest Farm
Sub-reach name	Chippenham, Forest Farm, 1	Chippenham, Forest Farm, 2	Chippenham, Forest Farm, 3	Chippenham, Forest Farm, 4
Module	1 to 5	1 to 5	1 to 5	1 to 5
Location	ST 94290 71592	ST 93987 71553	ST 93838 71382	ST 93716 71357
Shape	1.3333334	1.3333334	1.3333334	1.3333334
Average width	0.8	0.8	0.8	0.8
A1 - Brading Index	1	1	1	1
A2 - Sinuosity Index	1.0422535	1.0422535	1.0422535	1.0422535
A3 - Anabranching Index	1	1	1	1
A4 - Level of confinement	Unconfined	Unconfined	Unconfined	Unconfined
A5 - Reach Valley Gradient	0.002816901	0.002816901	0.002816901	0.002816901
A6 - Bedrock reach	FALSE	FALSE	FALSE	FALSE
A7 - Coarsest Bed Material	GP	GP	GP	GP
A8 - Average Bed Material	SI	SI	SI	SI
Calculated River Type	K	K	K	K
B1 - Bank top vegetation structure	2	2	1	2
B2 - Bank top tree feature richness	0	0	0	0
B3 - Bank top water-related features	0	0	0	0
B4 - Bank top NNIPS cover	0	0	0	0
B5 - Bank top managed ground cover	-2	-2	-2	-3
C1 - Bank face riparian vegetation structure	2	2	1	3

Table A16.4. Summary of River Condition Assessment (RCA).

Morph5	1	2	3	4
C2 - Bank face tree feature richness	1	1	0	1
C3 - Bank face natural bank profile extent	3	3	3	3
C4 - Bank face natural bank profile richness	1	1	1	1
C5 - Bank face natural bank material richness	1	1	1	0
C6 - Bank face bare (unvegetated) sediment extent	3	3	3	3
C7 - Bank face artificial bank profile extent	0	0	0	0
C8 - Bank face reinforcement extent	0	0	0	0
C9 - Bank face reinforcement material severity	0	0	0	0
C10 - Bank face NNIPS cover	0	0	0	0
D1 - Channel margin aquatic vegetation extent	4	4	4	4
D2 - Channel margin aquatic morphotype richness	2	2	2	2
D3 - Channel margin physical feature extent	0	0	0	0
D4 - Channel margin physical feature richness	0	0	0	0
D5 - Channel margin artificial features	0	0	0	0

Table A16.4. Summary of River Condition Assessment (RCA).

Morph5	1	2	3	4
E1 - Channel aquatic morphotype richness	2	2	2	2
E2 - Channel bed tree feature richness	1	1	1	1
E3 - Channel bed hydraulic feature richness	0	0	0	0
E4 - Channel bed natural physical features extent	0	0	3	2
E5 - Channel bed natural physical feature richness	0	0	1	1
E6 - Channel bed material richness	2	2	2	2
E7 - Channel bed siltation	0	0	0	0
E8 - Channel bed reinforcement extent	0	0	0	0
E9 - Channel bed reinforcement materials severity	0	0	0	0
E10 - Channel bed artificial features severity	0	-4	0	0
E11 - Channel bed NNIPS cover	0	0	0	0
E12 - Channel bed filamentous algae cover	-3	-3	-3	-3
Overdeepening	Yes	Yes	Yes	Yes
Final condition	Fairly poor	Fairly poor	Fairly poor	Fairly poor

Table A16.6: Baseline Watercourse Condition Assessment Results (excluding RCA habitats).

Table A16.5: Baseline Watercourse Condition Assessment Results (excluding RCA habitats).

Habitat type	Parcel reference	Condition	Condition assessment results
Ditches	D1	Poor	Poor condition • Passes condition criteria A – ditch is of good water quality. • Fails condition criteria B – a range of emergent, submerged and floating-leaved plants are not present. • Passes condition criteria C – less than 10% cover of duckweed. • Fails condition criteria D – marginal vegetation covers less than 75% of the ditch. • Passes condition criteria E – physical damage present along less than 5% of the ditch. • Fails condition criteria F – sufficient water levels are not maintained throughout the year. • Fails condition criteria G – more than 10% of the ditch is heavily shaded. • Passes condition criteria H – no non-native species recorded. Four condition criteria passed therefore 'Poor' condition.
Ditches	D2	Poor	Poor condition • Fails condition criteria A – ditch is not of good water quality. • Fails condition criteria B – a range of emergent, submerged and floating-leaved plants are not present. • Fails condition criteria C – more than 10% cover of duckweed. • Fails condition criteria D – marginal vegetation covers less than 75% of the ditch. • Passes condition criteria E – physical damage present along less than 5% of the ditch. • Fails condition criteria F – sufficient water levels are not maintained throughout the year. • Fails condition criteria G – more than 10% of the ditch is heavily shaded. • Passes condition criteria H – no non-native species recorded. Two condition criteria passed therefore 'Poor' condition.
Culverts	-	Poor	Poor condition No condition assessment required – condition fixed at Poor

Table A16.6: Baseline Individual Trees Condition Assessment Results

Tree Reference	Size	Condition criteria A: The tree is a native species (or at least 70% within the block are native species).	Condition criteria B: The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5m wide (individual trees automatically pass this criterion).	Condition criteria C: The tree is mature (or more than 50% within the block are mature).	Condition criteria D: There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Condition criteria E: Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	Condition criteria F: More than 20% of the tree canopy area is oversailing vegetation beneath.	Condition
T9	Medium	P	P	F	P	F	P	Moderate
T12	Medium	P	P	F	P	F	P	Moderate
T19	Large	P	P	P	P	F	P	Moderate
T21*	Very Large	P	P	P	P	P	P	Good
T26*	Very Large	P	P	P	P	P	P	Good
T27	Medium	P	P	F	P	F	P	Moderate
T28	Medium	P	P	F	P	F	P	Moderate
AT2	Medium	F	P	F	P	P	P	Moderate
AT3	Large	P	P	F	P	P	P	Moderate
AT4	Medium	F	P	F	P	P	P	Moderate
AT5	Medium	F	P	F	P	P	P	Moderate
AT6	Medium	F	P	F	P	P	P	Moderate
AT7	Medium	F	P	F	P	F	P	Moderate

*Veteran tree

Table A16.7: Post-Construction Management and Interventions

Habitat		Predicted condition	Justification
Urban Allotments	–	Moderate	Proposed management of tall forbs is likely to ensure the following criteria are met: B – Variety of species to provide nectar sources at various times throughout the year. C – Absence of invasive non-native species and species of detriment to native wildlife.
Urban Artificial unvegetated; unsealed surface	–	N/A - Other	-
Urban Bioswale	–	Moderate	Bioswales will be managed to ensure successful establishment of habitats of biodiversity value – i.e. will include wildflower grassland and wetland planting. Management is likely to achieve good condition, but moderate condition is assumed on a precautionary basis, to account for urban location and potential conflicts with water management requirements (e.g. emergency management during flood conditions).
Urban Developed land; sealed surface	–	N/A - Other	-
Urban Introduced shrub	–	Condition Assessment N/A	-
Heathland and shrub – Mixed scrub		Moderate	Proposed management of scrub habitats would result in the following condition criteria being met: A – at least three woody species with no one species comprising >75%. B – management will allow development of a variety of age classes. C – no invasive non-native species present and species indicative of sub-optimal condition make up <5% of ground cover. D – scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s).
Grassland Modified grassland	–	Poor	Precautionary assessment – areas of amenity grassland are unlikely to have a species richness of 6-8 species per m ² . Therefore, 'Poor' condition assumed.
Grassland Other neutral grassland	–	Moderate	Proposed management of wildflower grassland will ensure development of a diverse, species-rich sward, meeting the following condition criteria as a minimum, i.e.: A – the appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type. Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward.

Table A16.7: Post-Construction Management and Interventions

Habitat	Predicted condition	Justification
		B – Sward height will be varied. C – Cover of bracken <20% and cover of scrub <5%. Precautionary assessment – areas of other neutral grassland are unlikely to have a species richness of ≥ 10 species per m². Therefore, 'Moderate' condition assumed.
Woodland and forest – Other woodland; broadleaved	Moderate	The following scores will be targeted for each of the criteria: A – 2, B – 1, C – 3, D – 3, E – 3, F – 3, G – 2, H – 2, I – 1, J – 2, K – 1, L – 1, M – 3 (Score: 27).
Lakes – Ponds (non-priority habitat)	Moderate	Proposed management of pond habitats would result in the following condition criteria being met: A – Good water quality, with clear water. C – Less than 10% of the water surface is covered with duckweed or filamentous algae. F – Absence of non-native plants and animals. G – Not artificially stocked with fish. H – Emergent, submerged and floating plants cover at least 50% of the pond area. I – Pond surface is not shaded by more than 50%
Urban – Sustainable drainage system	Moderate	SuDS will be managed to ensure successful establishment of habitats of biodiversity value – i.e. will include wildflower grassland and wetland planting. Management is likely to achieve good condition, but moderate condition is assumed on a precautionary basis, to account for urban location and potential conflicts with water management requirements (e.g. emergency management during flood conditions).
Sparsely vegetated land – Tall forbs	Moderate	Proposed management of tall forbs is likely to ensure the following criteria are met: B – Variety of species to provide nectar sources at various times throughout the year. C – Absence of invasive non-native species and species of detriment to native wildlife.
Urban – Vegetated garden	Condition Assessment N/A	-
Urban – Urban trees	Moderate	Precautionary assessment - once established, urban trees are expected to pass condition criteria A, B, D and F as a minimum.

Table A16.7: Post-Construction Management and Interventions

Habitat	Predicted condition	Justification
Native species-rich hedgerow (with/without bank/ditch)	Moderate	Once established, proposed management will ensure new hedgerows are likely to meet the following condition criteria; i.e.: A1 – has to be >1.5m high on average. A2 – has to be >1.5m wide on average. B1 – no gaps of >0.5m beneath canopy for majority of hedge. B2 – gaps make up less than 10% of hedge length with no gaps >5m. C2 – nettles, docks and cleavers present in <20% hedge length. D1 – invasive/introduced species make up <10% hedge length. Precautionary assessment as good condition potentially achievable.
Native species-rich hedgerow with trees	Moderate	Once established, proposed management will ensure new hedgerows are likely to meet the following condition criteria; i.e.: A1 – has to be >1.5m high on average. A2 – has to be >1.5m wide on average. B1 – no gaps of >0.5m beneath canopy for majority of hedge. B2 – gaps make up less than 10% of hedge length with no gaps >5m. C1 – Undisturbed ground (1m width at least 1 side). C2 – nettles, docks and cleavers present in <20% hedge length. D1 – invasive/introduced species make up <10% hedge length. D2 - >90% of hedgerow or undisturbed ground is free from human damage. E2 - >95% of hedgerow trees are in healthy condition and little or no evidence of adverse impacts to tree health by damage from animals, pests and disease or human activity. Precautionary assessment as good condition potentially achievable.
Culvert (creation)	Poor	Culverts created where new road and footpath crossed the watercourse. Ensure that culverts are kept free from build-up of vegetation that could block the channel.

Table A16.8 Watercourse Enhancement Condition Assessment Results

Habitat type	Parcel reference	Condition	Condition assessment results
Ditches / Other rivers and streams	D1 / R1	Poor / Fairly Poor	Habitats enhanced through reduction in riparian encroachment. No proposed enhancement activities undertaken to improve condition of watercourses.

Figure A16.3: Headline results

Detailed results are provided within the Statutory Biodiversity Metric, which has been issued separately.

Forest Farm, Chippenham

Headline Results

Scroll down for final results ▲

Return to
results menu

On-site baseline	Habitat units	83.32	
	Hedgerow units	77.94	
	Watercourse units	8.19	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	114.43	
	Hedgerow units	95.55	
	Watercourse units	8.90	
On-site net change (units & percentage)	Habitat units	31.12	37.35%
	Hedgerow units	17.61	22.59%
	Watercourse units	0.71	8.68%

On-site net gain is less than target set ▲

Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%

Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	31.12	
	Hedgerow units	17.61	
	Watercourse units	0.71	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	31.12	
	Hedgerow units	17.61	
	Watercourse units	0.71	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	37.35%	
	Hedgerow units	22.59%	
	Watercourse units	8.68%	

Total net gain achieved is less than target set ▲

Trading rules satisfied?	No - Check Trading Summaries ▲
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Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	83.32	91.65	0.00
Hedgerow units	10.00%	77.94	85.74	0.00
Watercourse units	10.00%	8.19	9.01	0.11

No additional area habitat units required to meet target ✓

No additional hedgerow units required to meet target ✓

Input errors/rule breaks present in metric ▲

Appendix 17: Baseline Evaluation Criteria

Baseline Evaluation criteria

Key evaluation categories are as follows:

- International value (internationally designated sites, or sites meeting criteria for international designation. Sites supporting populations of internationally important species);
- UK value (sites with UK importance);
- National value (nationally designated sites (e.g. SSSIs) or sites meeting SSSI selection criteria. Sites containing viable areas of threatened Priority Habitat or supporting a viable population of Red Data Book species or supplying critical elements of their habitat requirements);
- Regional value (sites exceeding county-level designations but not meeting SSSI criteria. Sites containing viable areas of threatened habitats on the Regional BAP, supporting viable populations of species that are nationally scarce or included in the regional BAP due to rarity);
- County value (sites meeting criteria for county or metropolitan designations. Site containing a viable area of a threatened habitat identified on the county BAP or supporting viable populations of county or metropolitan rarities e.g. county BAP or county 'Red Data Book' species);
- District value (undesignated sites or features that are considered to appreciably enrich the habitat resource within the context of the Borough or District);
- Parish value (areas of habitat considered to appreciably enrich the habitat resource within the context of a parish or neighbourhood);
- Sub-Parish (ecological resource not meeting any of the above criteria).

Additional criteria employed were from the following:

- Schedules and Annexes of UK and European wildlife legislation (e.g. Wildlife and Countryside Act (1981) (as amended) and The Conservation of Habitats and Species Regulations 2017 (as amended);
- International conventions on wildlife (e.g. Bern Convention, Bonn convention);
- Habitats and species of Principal Importance.
- Local Biodiversity Action Plans.
- Taxi-specific conservation lists (e.g. Red Data Lists; Red/Amber Lists).

Appendix 18: Designated Sites of Nature Conservation



- Ramsar Sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)



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European Site Conservation Objectives for Bath and Bradford-on-Avon Bats Special Area of Conservation Site Code: UK0012584



With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of the habitats of qualifying species
- The structure and function of the habitats of qualifying species
- The supporting processes on which the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

S1303. *Rhinolophus hipposideros*; Lesser horseshoe bat

S1304. *Rhinolophus ferrumequinum*; Greater horseshoe bat

S1323. *Myotis bechsteinii*; Bechstein's bat

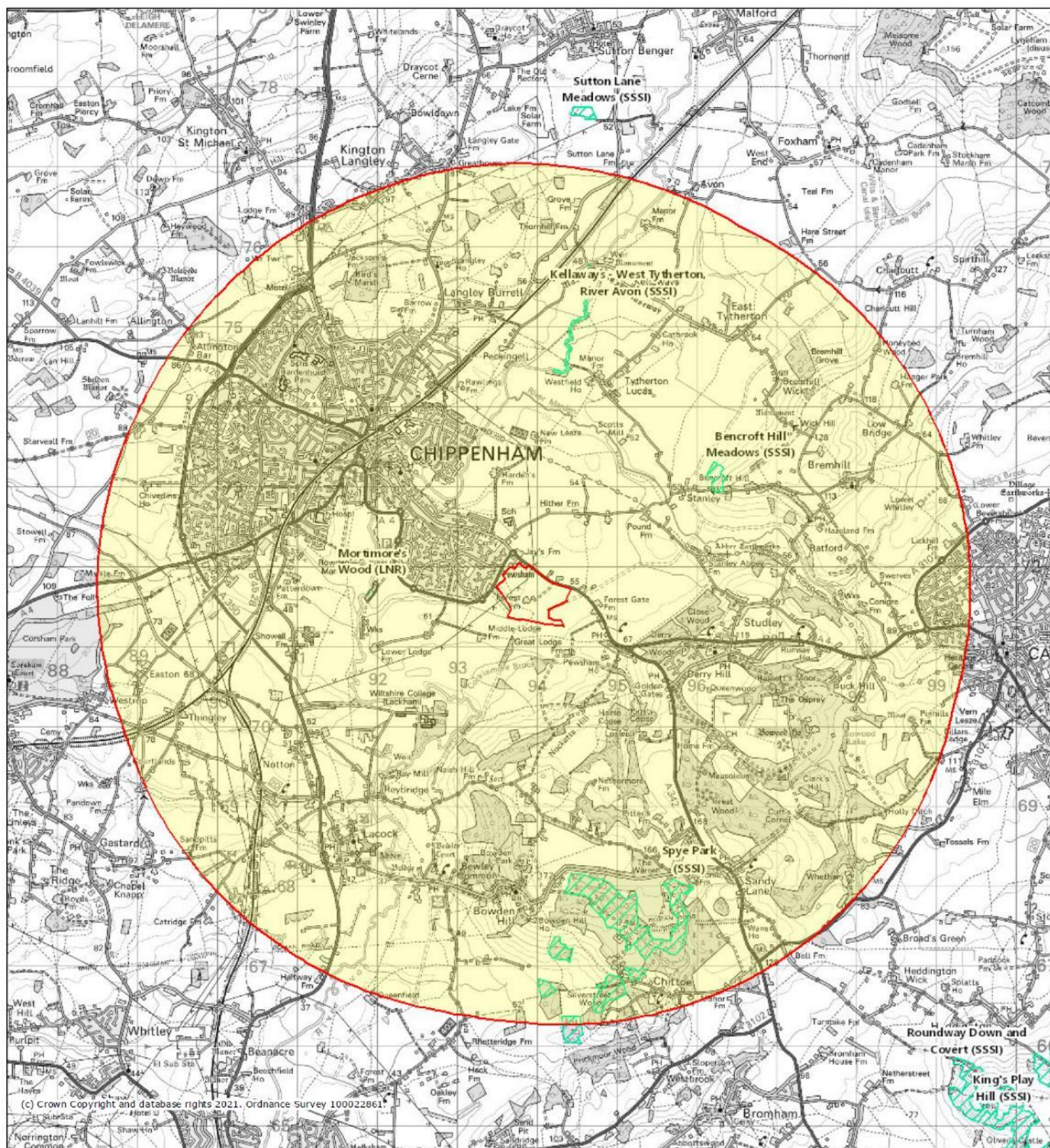
Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the “Habitats Regulations”). They must be considered when a competent authority is required to make a ‘Habitats Regulations Assessment’, including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

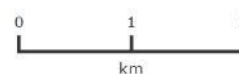
These Conservation Objectives are set for each habitat or species of a [Special Area of Conservation \(SAC\)](#). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term ‘favourable conservation status’ is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.



Legend

-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  Sites of Special Scientific Interest (England)



Projection = OSGB36
 xmin = 382000
 ymin = 165800
 xmax = 405800
 ymax = 177900

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COUNTY: WILTSHIRE SITE NAME: KELLAWAYS-WEST
TYTHERTON, RIVER AVON

DISTRICT: TROWBRIDGE

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authority: WILTSHIRE DISTRICT COUNCIL

National Grid Reference: ST 942 744–ST 947 753 Area: 4.1 (ha.)

Ordinance Survey Sheet 1:50,000: – 1:10,000: ST 97 NE

Date Notified (Under 1981 Act): 9 July 1998 Date of Last Revision: –

Other Information:

This is a new Geological Conservation Review site.

Description and Reasons for Notification:

Kellaways–West Tytherton is a river bank section along the River Avon in Wiltshire situated 1 km south east of Langley Burrell. The site is the historical type locality for the Callovian Stage; the stage name being derived from a Latinisation of ‘Kellaways’.

The locality includes a number of highly-fossiliferous exposures of the famous ‘Kellaways Rock’, a calcareous sandstone yielding abundant well-preserved bivalves, gastropods, brachiopods, belemnites and ammonites. The site includes the designated type localities of the Kellaways Sand Member, which includes the ‘Kellaways Rock’ itself and also the underlying Kellaways Clay Member of the Kellaways Formation (in a borehole section). The Kellaways district is also the type locality of many important invertebrate species, especially ammonites; the latter include the internationally important stratigraphic index species *Sigaloceras calloviense* (Sowerby), and *Sigaloceras micans* (Buckman) and around 17 other nominal species.

The Kellaways exposures are of great international and historical significance and constitute the most important single Callovian locality in Britain.

COUNTY: WILTSHIRE SITE NAME: BENCROFT HILL MEADOW

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authorities: NORTH WILTSHIRE DISTRICT COUNCIL,
Wiltshire County Council

National Grid Reference: ST 962732 Area: 5.1 (ha.) 12.6 (ac.)

Ordnance Survey Sheet 1:50,000: 173 1:10,000: ST 97 SE

Date Notified (Under 1949 Act): – Date of Last Revision: –

Date Notified (Under 1981 Act): 1988 Date of Last Revision: –

Other Information:

Description and Reasons for Notification:

Bencroft Hill Meadow comprises an area of unimproved pasture of exceptional botanical quality. It is one of the most species-rich examples in southern England of a habitat type which has been largely lost in Britain due to the recent widespread adoption of intensive farming methods.

The site lies on the eastern edge of the Oxford Clay Vale of North Wiltshire and has developed on neutral clay soils on a north-west facing hummocky hillside, overlooking the valley of the River Marden.

The unimproved sward supports a wide variety of grasses and sedges including abundant sweet vernal-grass *Anthoxanthum odoratum*, crested dog's-tail *Cynosurus cristatus*, quaking-grass *Briza media* and red fescue *Festuca rubra*. Also occurring frequently are meadow foxtail *Alopecurus pratensis*, meadow fescue *Festuca pratensis*, rough meadow-grass *Poa trivialis*, and the locally uncommon heath-grass *Danthonia decumbens*.

A light grazing regime has allowed a diversity of herbs to flourish, with large populations of devil's-bit scabious *Succisa pratensis*, cowslip *Primula veris*, pignut *Conopodium majus*, common spotted-orchid *Dactylorhiza fuchsii*, lady's bedstraw *Galium verum* and oxeye daisy *Leucanthemum vulgare*. Slightly less frequent are meadow vetchling *Lathyrus pratensis*, tufted vetch *Vicia cracca*, common knapweed *Centaurea nigra*, common bird's-foot-trefoil *Lotus corniculatus* and tormentil *Potentilla erecta*. Species indicative of a long period of uninterrupted grassland management without the use of chemicals or artificial fertilisers are widespread and include adder's-tongue *Ophioglossum vulgatum*, dyer's greenweed *Genista tinctoria*, betony *Stachys officinalis*, saw-wort *Serratula tinctoria*, pepper-saxifrage *Silene silene* and the locally rare hairy lady's-mantle *Alchemilla filicaulis*.

On the lower slopes of the meadow the heavy clay soils have given rise to wet flushes which support plant communities characteristic of damp and marshy ground. Marsh horse-tail *Equisetum palustre*, jointed rush *Juncus articulatus*, water mint *Mentha aquatica* and marsh-marigold *Caltha palustris* occur along with ragged robin *Lychnis flos-cuculi*, creeping-Jenny *Lysimachia nummularia*, common fleabane *Pulicaria dysenterica* and greater bird's-foot-trefoil *Lotus uliginosus*.

The meadow is bounded in places by overgrown species-rich hedges. These are comprised of shrubs such as hawthorn, field maple, blackthorn, hazel, field rose and dog rose, with occasional mature specimens of oak and ash.

A variety of typical grassland butterflies have been recorded including small copper, small heath and common blue.

County: Wiltshire

Site Name: Spye Park

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authorities: Wiltshire County Council, West Wiltshire District Council, Kennet District Council

National Grid Reference: ST 952674 ST 944662 ST 963673 ST 952669 ST 949667
ST 942672 ST 941667

Ordnance Survey Sheet 1:50,000: 173

1:10,000: ST 96 NW ST 96 NE

Date Notified (Under 1949 Act): 1951

Date of Last Revision: 1975

Date Notified (Under 1981 Act): 1986

Date of Last Revision:

Date Modification Confirmed: 1987

Area: 90.3 ha 223.1 ac

Other Information:

Description and Reasons for Notification:

Spye Park is an extensive habitat mosaic comprising large expanses of some of the finest undisturbed alderwoods in the county, along with oakwoods, parkland and an area of dry acidic grassland containing several locally uncommon plants. Rich communities of lichens, bryophytes and vascular plants flourish in the wet soil conditions prevailing over much of the park.

The geology of this fragmented site comprises Oxford Clay, Corallian Beds and Lower Greensand within a complex valley system of gentle to moderate slopes. Above the springline the soil is well drained but in low lying areas the ground is frequently waterlogged, with many wet flushes and streams.

Much of the site is characterised by extensive stands of springline and plateau alderwood, (*Alnus glutinosa*), including some very large multi-stemmed specimens. These occur on perennially saturated ground with occasional ash (*Fraxinus excelsior*), downy birch (*Betula pubescens*) and oak (*Quercus robur*). Mature oak and ash occur frequently on slightly drier soils within the acid pedunculate oak-ash-woodland type. In places there is regrowth of wych elm (*Ulmus glabra*) and English elm (*U. procera*) following attacks of Dutch elm disease. Scattered silver birch (*Betula endula*), field maple (*Acer campestre*), wild cherry (*Prunus avium*) and rowan (*Sorbus aucuparia*) also occur. The shrub layer includes neglected coppice of hazel (*Corylus avellana*) with hawthorn (*Crataegus monogyna*), privet (*Ligustrum vulgare*), elder (*Sambucus nigra*) and occasionally holly (*Ilex aquifolium*).

The generally open canopy and waterlogged soils give rise to a diverse ground flora where greater tussock-sedge (*Carex paniculata*) is prominent. Other widespread species are pendulous sedge (*C. pendula*), great horsetail (*Equisetum telmateia*), lady fern (*Athyrium filix-*

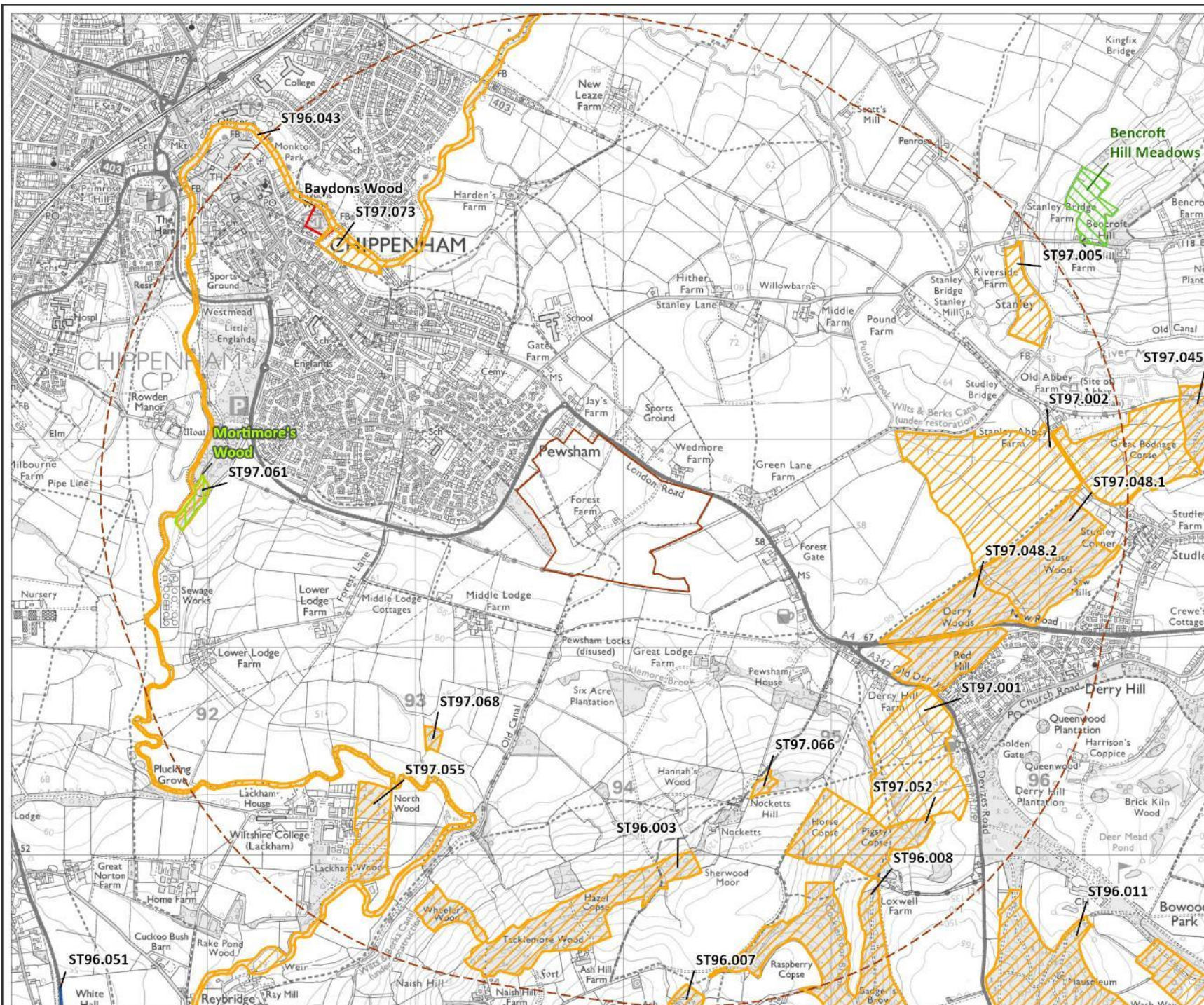
femina) and opposite-leaved golden-saxifrage (*Chrysosplenium oppositifolium*). Several species uncommon in Wiltshire are present such as marsh violet (*Viola palustris*), smooth-stalked sedge (*Carex laevigata*), thin-spiked wood-sedge (*C. strigosa*) and scaly male-fern (*Dryopteris affinis*). Both bluebell (*Hyacinthoides non-scripta*) and dog's mercury (*Mercurialis perennis*) occur commonly in drier areas, often under a more closed canopy.

Spye Park is one of the richest sites for epiphytic lichens in Wiltshire. Many species characteristic of ancient forest relics are present such as *Arthonia vinosa*, *Arthopyrenia ranunculospora*, *Catillaria sphaeroides*, *Pyrenula chlorospila*, *Pachyphiale cornea*, *Peltigera horizontalis* and *Thelotrema lepadinum*. Long lived oaks carry *Lecanactis premnea* and *Opegrapha lyncea*. Parkland trees are also important, holding examples of the Xanthorion community. Uncommon epiphytic bryophytes include the mosses *Orthotrichum lyeUii* and *Leucodon sciuroides* and the leafy liverwort *Frullania tamarisci*.

Spye Park is an important site for breeding woodland birds including buzzard (*Buteo buteo*), redstart (*Phoenicurus phoenicurus*), nightingale (*Luscinia megarhynchos*) and tree pipit (*Anthus trivialis*). The wetness of the site along with its varied woodland structure and abundance of dead wood favours a diverse insect community.

Notified Sites Within
2000 metres of
Forest Farm, Chippenham:
ST938715

Exported: 14/10/2024



- Search Area
- WWT Reserves
- Site of Special Scientific Interest
- National Nature Reserve
- Special Area of Conservation
- Special Protection Area
- Local Nature Reserve
- Local Wildlife Sites
- Local Geological Site
- Protected Road Verge
- Woodland Trust Reserve
- Bat Consultation Zone
- County Boundary

Table A18.1: Non-statutory designated sites within 2km

File code	Grid Ref.	Site name	Area (Ha)	Site Description	Selection criteria	Source	Main Habitat	Latest Recorded Habitats	Additional Status
ST96.003	ST937696	Tacklemore Wood, Wheeler's Wood, Hazel Copse	23.15	Ancient woodland site, semi-natural in the west, otherwise mostly planted broadleaves & some conifer.	HW1.1 (4.75ha); HW1.3 (17.95ha)	NCC AWI 1987; WSP(1) 2000	Wet woodland	[National Vegetation Classification - 17/11/2000] W7 Alnus glutinosa-Fraxinus excelsior-Lysimachia nemorum woodla; W8 Fraxinus excelsior-Acer campestre-Mercurialis perennis woodl	
ST96.007	ST943693	Ash Grove	2.61	A small greensand site with areas of hay meadow, Pond-sedge swamp, open water and damp, flushy woodland.	HG4.1 (0.72ha); HW1.1 (1.03ha); HW4.2.1 (1.15ha); HF2 (0.56ha)	NCC AWI 1987; WSP(3) 2008	Wet woodland/Fen, marsh and swamp	[BAP Key (Priority) Habitats - 07/04/2008] Fens; Lowland meadows; Wet woodland	
ST96.008	ST950695	Raspberry Copse and Badgers Brow	27.88	Has a variety of stand-types and is species rich.	HW1.1 (26.41ha); HW1.3 (1.11ha)	WWT (RF); WTNC 1984-85 (W); NCC AWI 1987; WSP(0)	Broadleaved woodland	Broadleaved woodland	
ST96.043	ST905643	Bristol Avon River	150.35	One of the main river systems draining north-west Wiltshire.	X6.2 (150.35ha)	WWT (10km); WSP(1) 2015	River	[Phase 1 Habitat Classification - November 1996] G23 Open water: running, oligotrophic	
ST97.001	ST954705	Derry Hill Farm Meadows	22.25	A group of seven small pastures with unimproved neutral grassland and wet flushes, also includes a small stand of woodland.	X3 (22.25ha)	EN 1992 (G); WSP(0)	Neutral grassland	[Phase 1 Habitat Classification - 23/06/1999] B Grassland and marsh : [National Vegetation Classification - 23/06/1999] MG10 Holcus lanatus-Juncus effusus rush-pasture; MG5 Cynosurus cristatus-Centaurea nigra grassland; MG5c Danthonia decumbens sub-commu	
ST97.002	ST962719	Stanley Abbey Farm Meadows	53.78	A large complex of unimproved and semi-improved neutral pasture and meadow with diverse	HG3 (30.59ha)	WTNC 1984-85 (G); EN 1992 (G); WSP(2) 2007	Neutral grassland	[BAP Key (Priority) Habitats - 15/05/2007] Lowland meadows : [Phase 1 Habitat Classification - 15/05/2007] B212 Grassland: neutral, unimproved, lowland :	

Table A18.1: Non-statutory designated sites within 2km

File code	Grid Ref.	Site name	Area (Ha)	Site Description	Selection criteria	Source	Main Habitat	Latest Recorded Habitats	Additional Status
				geology and topography supporting a range of plant communities.				[National Vegetation Classification - 15/05/2007] MG5 Cynosurus cristatus-Centaurea nigra grassland;	
ST97.005	ST95957268	Bencroft Hill Meadows	5.29	Two hay meadows with herb rich neutral grassland almost throughout.	HG3 (4.78ha)	NCC 1988-90 (G); WTNC 1984-85 (G); EN 1992 (G); WSP(1) 2014	Neutral grassland	[Phase 1 Habitat Classification - 18/06/1992] B4 Grassland: improved : [National Vegetation Classification - 18/06/1992] MG5 Cynosurus cristatus-Centaurea nigra grassland; MG6 Lolium perenne-Cynosurus cristatus grassland	
ST97.048.1	ST960714	Close Wood	19.73	Ancient semi-natural broadleaved woodland with substantial wet areas on a north-facing slope on greensand and clay	HW1.1 (17.6ha); HW1.3 (0.97ha); HW4.1 (19.73ha)	NCC 1978-91; NCC 1982 (W); NCC AWI 1987; WSP(1) 2014	Broadleaved woodland	[BAP Key (Priority) Habitats - 07/05/2014] Lowland mixed deciduous woodland; Wet woodland	
ST97.048.2	ST955711	Derry Woods	18.6	Two areas of ancient semi-natural broadleaved woodland on a greensand & clay ridge flanking the A4.	HW1.1 (15.58ha); HW1.3 (2.99ha); HW4.1 (18.6ha)	NCC 1978-91; NCC 1982 (W); NCC AWI 1987; WSP(1) 2014	Broadleaved woodland	[BAP Key (Priority) Habitats - 07/05/2014] Lowland mixed deciduous woodland; Wet woodland	
ST97.052	ST951701	Horse Copse and Pigsty Copse	14.82	Commercial plantations of Norway Spruce on ancient woodland site on valley sides of Cocklemore Brook.	HW1.4 (12.64ha); HW4.1 (3.17ha)	WWT (RF); NCC 1978-91; NCC AWI 1987; WSP(1) 2014	Conifer woodland	[BAP Key (Priority) Habitats - 06/05/2014] Lowland mixed deciduous woodland; Rivers	
ST97.055	ST927701	Lackham Wood	7.63	Ancient semi-natural broadleaved	HW1.1 (5.47ha);	NCC 1982 (W); NCC	Broadleaved woodland	[National Vegetation Classification - 08/06/1981] W8 Fraxinus excelsior-	

Table A18.1: Non-statutory designated sites within 2km

File code	Grid Ref.	Site name	Area (Ha)	Site Description	Selection criteria	Source	Main Habitat	Latest Recorded Habitats	Additional Status
				woodland with some replanting.	HW1.3 (1.62ha)	AWI 1987; WSP(0)		Acer campestre-Mercurialis perennis woodl	
ST97.061	ST919717	Mortimor's Wood	1.44	A small ancient, semi-natural broadleaved woodland on a steep northwest-facing slope above a bend in the River Avon.	O3.3 (1.44ha); HW4.1 (1.44ha)	WWT (10km); WTNC 1984-85 (W); WSP(1) 2008	Broadleaved woodland	[BAP Key (Priority) Habitats - 04/04/2008] Lowland mixed deciduous woodland	LNR
ST97.066	ST947703	Nocketts Hill Copse	0.69	A small fragment of ancient wet Alder woodland on the junction of the greensand with clay. Includes a number of springs and large areas of flush.	HW4.1 (0.69ha)	WSP(2) 2007	Broadleaved woodland	[BAP Key (Priority) Habitats - 25/04/2007] Wet woodland : [Phase 1 Habitat Classification - 25/04/2007] A111 Woodland: broadleaved, semi-natural	
ST97.068	ST931705	Middle Lodge Wood	0.78	A small semi-natural Oak wood in a shallow valley basin bisected by Cocklemore Brook.	HW4.1 (0.75ha)	WSP(2) 2011	Broadleaved woodland	[BAP Key (Priority) Habitats - 16/08/2011] Lowland mixed deciduous woodland	
ST97.073	ST927727	Baydons Meadow	2.68	A small area of neutral grassland, bordered by the River Avon along the Northern boundary.	X10 (2.68ha)	WSP(0)	Neutral grassland	[Phase 1 Habitat Classification - March 2005] B202 Grassland: neutral, lowland; B6 Grassland: poor semi-improved	



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