

Ecological Impact Assessment

Land North of Whychurch Farm, Malmesbury

Gleeson Land

February 2025

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Executive summary

Introduction and approach

EAD Ecology was commissioned by Gleeson Land to undertake an Ecological Impact Assessment (EclA) of a proposed residential development at Land North of Whychurch Farm and west of Crudwell Road, Malmesbury. 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. There is one European designated site within 10km of the Site; North Meadow and Clattinger Farm Special Area of Conservation (SAC), which is designated for the presence of the Annex I Habitat 'Lowland hay meadows', lies 8.1km to the north-east. The Site lies outside of the 'Zone of Influence' for impacts arising from recreational disturbance to this SAC, as identified in the North Meadow and Clattinger Farm SAC Interim Recreation Mitigation Strategy (Gallagher et al, 2023). The Site does not lie within any core areas or consultation zones for SACs that are designated for bat populations, nor does it lie within any river catchments where increases in nutrients have been identified as having adverse effects on the integrity of European sites.

Three statutory designated sites occur within 5km of the Site; Conygre Mead Local Nature Reserve (LNR), Corston Quarry and Pond LNR, and Cloatley Manor Farm Site of Special Scientific Interest (SSSI). Six non-statutory Local Wildlife Sites (LWS) occur within 2km, the nearest being Conygre Mead LWS which lies approximately 400m south of the Site.

Habitats

The Site comprised of three fields of modified grassland, bound predominantly by species-rich native hedgerows, some containing mature broadleaved trees. One further mature tree was present within grassland in the southernmost field. A drainage ditch was present along the north-western Site boundary and a small parcel of broadleaved woodland was recorded within a corner of the southernmost field.

Protected / notable species

Ecological surveys of the Site were undertaken in 2020 to provide the ecological baseline for a separate planning application. The habitat survey of the Site was updated in July 2024; this did not identify any significant changes to the types or extents of habitats on Site since the previous surveys, however, it was considered appropriate to update the majority of Phase 2 surveys to inform the development proposals.

The update ecological surveys started in July 2024 and some will continue until July 2025. It has, therefore, not been possible to complete the update great crested newt, reptile survey, breeding bird survey, bat activity survey, bat roost survey of trees, and otter and water vole survey in advance of the submission of this report. Surveys for these species will be completed by July 2025 and the results and assessment of effects submitted to Wiltshire Council as an Addendum to this EclA Report. Whilst this EclA is not informed by the full results of the ongoing surveys, the assessment includes an appropriate baseline for validation and registration of an outline application in accordance with Section 7 of British Standards: Biodiversity — Code of practice for planning and development (BS42020:2013) and provides identification and a precautionary assessment of all likely impacts based on the Indicative Masterplan and Land Use Parameter Plan.

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

- No suitable amphibian breeding habitat was present within the Site. The Site provided suitable terrestrial foraging habitat for widespread amphibian species; hedgerows also provided suitable hibernation habitat. An environmental DNA (eDNA) test undertaken in 2020 of the only potentially suitable breeding pond identified within 250m of Site returned a negative result for the presence of great crested newt; the presence of this species on Site was therefore considered unlikely.
- A 'Low' population of slow-worms and a 'Low' population of grass snake was present onsite during survey undertaken in 2020; both are legally-protected, Priority Species.
- A range of common and widespread breeding-bird species were recorded during surveys undertaken in 2020, although this included the following declining species of conservation concern: dunnock, house sparrow, linnet and stock dove. Trees and hedgerows provided suitable breeding habitat.
- One partially-used outlier badger sett was recorded on the south-western boundary of the Site in 2024 and the habitats within the Site were suitable for foraging badgers.
- No evidence of hazel dormouse was recorded within hedgerows on Site during surveys undertaken in 2020 and 2024; this species is considered to be absent from Site.
- A minimum of ten bat species was recorded during the bat activity surveys, with common pipistrelle the most abundant species, followed by noctule, soprano pipistrelle, and *Myotis* bat species. The highest levels of bat activity recorded within the Site during surveys were along the eastern boundary of the northern field, alongside hedgerows in the west of the Site; and in the sheltered south-west corner of the Site. Greater horseshoe bat, lesser horseshoe bat, serotine, barbastelle, *Nyctalus* species, Nathusius' pipistrelle and long-eared bat were recorded on static detectors but accounted for fewer than 1% of registrations. Two trees onsite were identified as having suitable roosting features for bats, both were provisionally assessed as 'PRF-M' although no evidence of roosting bats has been recorded to date; neither of these trees would be directly affected by the development proposals, although further survey is proposed to confirm the absence of roosts and inform mitigation requirements.
- No evidence of otter or water vole was identified during survey in 2024. The ditch on Site was deemed unsuitable for otter and beaver and considered to provide sub-optimal habitat for water vole due to the absence of standing water for the majority of the year.
- Habitats on Site were suitable for hedgehog (a Priority species), and its presence was assumed.

Potential effects, avoidance, mitigation, compensation and enhancement

There would be no likely significant effect on any European designated site as a result of the development. There is potential for a pollution event during construction to have a negative effect on Conygre Mead LNR/LWS and Bristol Avon River LWS; refer to avoidance and mitigation measures set out below. No effects on any other designated sites are predicted during the construction phase and no effects on any designated sites are predicted post-construction.

Without mitigation, construction would result in the loss of modified grassland and sections of hedgerow. 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 common amphibians, reptiles, nesting birds, badgers and hedgehogs. There would also be the potential for disturbance to commuting and foraging bats, and badgers arising from lighting during and post-construction.

The proposed development proposes an integrated landscape and ecological design, including the creation of new wildlife habitats within the Site, comprising native woodland, hedgerow and tree planting, wildflower meadow, scrub, SUDs pond and associated wetland habitats. The proposed new boundary

hedgerows and planting along currently undefined sections of the Site boundary would strengthen the existing habitat network for bats and other nocturnal species.

Habitat creation proposals onsite have been assessed using the Statutory Biodiversity Metric. The proposals would deliver a net gain of +10.51 Habitat Units (40.38%), a net gain of +4.35 Hedgerow Units (+28.77%) and a net gain of +0.8 Watercourse Units (+15.01%). Additional measures undertaken to avoid, mitigate and compensate negative 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 and mature trees would be protected from disturbance during construction through the use of temporary barriers (e.g., Heras fencing) in accordance with BS5837:2012.
- The mitigation strategy for amphibians and reptiles 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 three reptile hibernacula within the Public Open Space.
- Hedgerow removal would be undertaken outside of bird-nesting season or preceded by a search for nesting birds.
- Prior to construction, a re-survey of the Site would be undertaken to re-confirm the absence of badger setts and identify whether any new badger setts had become established within or adjacent to the works area.
- 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.
- 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 would also be 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 negative effects on any designated sites of nature conservation importance, and no effects on the integrity of European designated sites are predicted.

There would be a long-term positive effect on habitats and >10% Biodiversity Net Gain could be achieved onsite. Long-term negative residual effects on badgers would occur through loss of foraging habitat; these are 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 would avoid significant ecological harm and could deliver a minimum of 10% biodiversity net gain in accordance with relevant national and local biodiversity planning policies. Development could be undertaken in accordance with wildlife legislation relating to designated sites, habitats and protected species. 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 Land North of Whychurch Farm and west of Crudwell Road, Malmesbury (approximate OS Grid Ref: ST937881; 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 negative 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 and planning policy.

1.2 Legislation and planning policy

Wildlife legislation

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

- Environment Act 2021 (and implementing Regulations);
- 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 Act 2006;
- Protection of Badgers Act 1992; and
- Hedgerow Regulations 1997 (as amended).

1.2.2 A summary of 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 (adopted January 2015) 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 Policy 50: Biodiversity and Geodiversity.
- 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.

- 1.2.6 Wiltshire Council is currently undertaking a Local Plan Review and published a draft Local Plan for Regulation 19 consultation in September 2023. The emerging Local Plan does not revisit the strategic objectives that were set out in the WCS, but it does update and introduce new policies to guide the determination of planning applications.
- 1.2.7 Policy 89 of the emerging Local Plan requires developments to achieve a 20% Biodiversity Net Gain (BNG). This exceeds the mandatory 10% BNG requirement. While Plan-makers may seek a higher percentage than the mandatory requirement, Government guidance¹ states that it would “generally be inappropriate for plans or supplementary planning documents to include policies or guidance which are inconsistent with this [statutory] framework”, and that, if proposed, “such policies will need to be evidenced including as to local need for a higher percentage, local opportunities for a higher percentage and any impacts on viability for development.” It is important to note that Policy 89 of the emerging Local Plan has not yet been examined or adopted, and is yet to be tested against the emerging Government guidance. Further relevant local 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 August 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 on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) and Wiltshire Biodiversity Action Plan (BAP) Priority Species.
- 1.3.3 Information was also obtained from the following websites (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

- 1.3.4 An Extended Phase 1 Habitat survey of the Site was undertaken on 19 May 2020 following guidelines published by JNCC (2010) and Institute of Environmental Assessment (1995). This survey identified the main habitat types on the Site and the presence/potential presence of

¹ <https://www.gov.uk/guidance/biodiversity-net-gain>

protected and notable species. Further (Phase 2) surveys were subsequently undertaken to determine if such species were present; a summary of these surveys is provided in Table 1.1.

- 1.3.5 An update habitat survey of the Site was undertaken on 31 July 2024 in accordance with the UKHabs (v2.0) UK Habitat Classification User Manual Methods (UKHAB, 2023). The results of the UKHabs survey were detailed on a 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 on the Site; refer to Appendix 4.
- 1.3.6 Beyond minor habitat classification variations between the differing habitat survey methodologies, the UKHabs survey did not identify any significant changes to the types or extents of habitats on Site since the previous surveys undertaken in 2020, however, it was considered appropriate to update the majority of surveys listed in Table 1.1 to inform the emerging development proposals. Where relevant, the results of the 2020 surveys have been referenced in this EclA, including where update surveys have been undertaken or are proposed; refer to Paragraphs 1.3.7 - 1.3.9. Full details of methodologies and results are contained in Appendices 5-14. All surveys were carried out following standard published methods.

Table 1.1: Summary of Phase 2 ecological surveys

Survey	Date	Details
Hedgerow	July 2024	Assessment of hedgerows according to Hedgerow Regulations (1997) criteria. Refer to Appendix 5.
Great crested newt	June 2020 and April 2025	Habitat Suitability Index and eDNA surveys of suitable waterbodies within 250m; undertaken in 2020 and will be updated in 2025. Refer to Appendix 6.
Reptile	June-September 2020 April-May 2025	Deployment and seven checks of artificial refugia; undertaken in 2020 and will be updated in 2025. Refer to Appendix 7.
Breeding bird	May-June 2020 April-May 2025	Recording of all bird species and associated breeding behaviour over three survey visits; undertaken in 2020 and will be updated in 2025. Refer to Appendix 8.
Hazel dormouse	May-November 2020 July-November 2024	Deployment of dormouse nesting tubes in hedgerows onsite followed by monthly checks and a nut search; undertaken in 2020 and updated in 2024. Refer to Appendix 9.
Badger	July and October 2020, July 2021 and July 2024	Search for signs of badger activity e.g. setts, prints and latrines; undertaken in 2020 and updated in 2021 and 2024. Refer to Appendix 10.
Bat activity	May-October 2020 Update transect surveys: August 2024, October 2024 and May 2025 Update static bat detector surveys: July-October 2024 and April-June 2025	Transect surveys and monthly deployment of static bat detector surveys for at least five nights per month; undertaken in 2020 and updated in 2024-2025. Refer to Appendix 11.

Table 1.1: Summary of Phase 2 ecological surveys

Survey	Date	Details
Bat roost	July-September 2020 July-September 2024 and May 2025	Ground-based assessment of trees to identify potential bat roost features, followed by dusk emergence and dawn re-entry (2020) and aerial tree climbing surveys (2024) of two trees; undertaken in 2020 and updated in 2024-2025. Refer to Appendix 12.
Otter and water vole	September 2024 and May 2025	A search for signs of otter or water vole within the Site and for any potential otter holts or resting sites within or immediately adjacent to the Site; refer to Appendix 13.
Habitat Condition Assessment	July 2024	Habitat Condition Assessment of all habitats on-Site, following Statutory Metric guidance (Defra 2024a). Refer to Appendix 14.

Survey limitations

- 1.3.7 The update ecological surveys started in July 2024. It has therefore not been possible to commence the update great crested newt, reptile and breeding bird surveys, or complete the update bat activity survey, bat roost survey of trees and water vole surveys. These surveys will be undertaken between April and early June 2025 and an assessment/confirmation of effects submitted as an Addendum to the EclA in June 2025. As the habitats onsite had not changed significantly, it was considered appropriate to include the results of the 2020 surveys within this EclA report to inform the emerging development proposals.
- 1.3.8 Whilst this EclA is not informed by the full results of the updated surveys, the assessment includes an appropriate baseline for validation and registration of an Outline Planning Application in accordance with Section 7 of British Standards: Biodiversity — Code of practice for planning and development (BS42020:2013). It identifies and provides a precautionary assessment of all likely impacts based on the Illustrative Masterplan (refer to Figure 2) and Land Use Parameter Plan (refer to Figure 4).
- 1.3.9 The design process has included ecological input to the Masterplan to ensure that precautionary avoidance and mitigation measures, where applicable, have been integrated into the proposals and that appropriate parameters for development are set. The EclA details how and when these measures would be delivered. The final avoidance and mitigation strategies will be confirmed following completion of all of the surveys; these will be set out in the EclA Addendum Report.

Evaluation of ecological features

- 1.3.10 The importance of the ecological features identified 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 15. 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

- 1.3.11 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

- 1.3.12 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

- 1.3.13 The proposed development (refer to Figure 2) was informed by the ecological baseline, including the 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

- 1.3.14 An assessment of the residual positive, negative 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.
- 1.3.15 Effects were described at a geographical scale (refer to Appendix 15); effects identified at Sub-Parish level and below were not considered 'Significant'.
- 1.3.16 The conclusion to the assessment confirms any significant residual effects and compliance with national planning policy (including the avoidance of 'significant harm' in accordance with Paragraph 193 of the NPPF, 2024); local planning policy (refer to Paragraphs 1.2.4-1.2.7); and wildlife legislation.

Biodiversity Net Gain

- 1.3.17 A Biodiversity Net Gain (BNG) Assessment was undertaken using the Defra Statutory Biodiversity Metric calculation tool (Defra 2024b). A Biodiversity Statement is provided in Section 5.4.
- 1.3.18 A Habitat Condition Assessment (HCA) survey was undertaken to inform the BNG assessment; this was undertaken by an experienced ecologist (FISC Level 5) on 31 July 2024. All habitats and hedgerows were assessed in accordance with the Statutory Metric Condition Assessment Criteria (Defra, 2024a). All baseline habitats were mapped in accordance with the UKHabs Classification System (V2.0, 2023) following methodology detailed in the UK Habitat Classification User Manual (Butcher et al. 2020). The Illustrative Masterplan (Figure 2) and Land Use Parameter Plan (Figure 4) were referenced for the proposed (post-intervention) development scenario; refer to Appendix 14 for further details. A further BNG assessment would be undertaken at the Reserved Matters stage using detailed landscape planting plans to confirm the delivery of net gain, as required by the mandatory Biodiversity Gain Planning Condition.

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 - 2.1.4 below and Appendix 16.

European designated sites

- 2.1.2 One European-designated site occurs within 10km of the Site. North Meadow and Clattinger Farm Special Area of Conservation (SAC), which is designated for the presence of the Annex I Habitat 'Lowland hay meadows', lies approximately 8.1km to the north-east. The Site lies outside of the 'Zone of Influence' for impacts arising from recreational disturbance to this SAC, as identified in the North Meadow and Clattinger Farm SAC Interim Recreation Mitigation Strategy (Gallagher et al, 2023). The Site does not lie within any core areas or consultation zones for SACs that are designated for bat populations (Wiltshire Council & Natural England 2015), nor does it lie within any river catchments where increases in nutrients have been identified as having adverse effects on the integrity of European sites.

Nationally designated sites

- 2.1.3 Three statutory designated sites of nature conservation importance occur within 5km of the Site, comprising one Site of Special Scientific Interest (SSSI) and two Local Nature Reserves (LNR); refer to Table 2.1 and Appendix 16. The nearest is Conygre Mead LNR, which lies 400m to the south and is designated for a range of habitats including wet woodland and calcareous grassland. The Site does not lie within a SSSI 'Impact Risk Zone' for residential development.

Non-statutory designated sites

- 2.1.4 There are six non-statutory designated sites of nature conservation importance within the study area; the closest is Conygre Mead Local Wildlife Site (LWS), which is located approximately 400m to the south of the Site at its nearest point; refer to Table 2.1 and Appendix 16.

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			
North Meadow and Clattinger Farm	SAC	Designated for the presence of the Annex I habitat 'Lowland hay meadows' (<i>Alopecurus pratensis</i> , <i>Sanguisorba officinalis</i>).	8.1km north-east
Nationally designated sites within 5km			
Conygre Mead	LNR and LWS	Wet woodland, scrub, tall-herb vegetation, riparian communities and a small area of restored calcareous grassland.	400m south

Table 2.1: Designated sites within the study area

Site name	Designation	Reason for designation	Approximate distance and direction from Site
Corston Quarry and Pond	LNR	Small disused quarry with pond, scrub and species rich grassland.	3.8km south
Cloatley Manor Farm Meadows	SSSI	Unimproved and lowland neutral grassland, with an area of semi-improved grassland, managed as hay meadows.	4.8km north-east
Non-statutory designated sites within 2km			
Bristol Avon River	LWS	One of the main river systems draining north-west Wiltshire.	450m south-west
Long Wood, Charlton Park	LWS	An ancient woodland site with semi-natural broadleaved woodland and conifer plantation.	780m east
Park Lane Farm Meadows	LWS	Three meadows supporting unimproved species-rich neutral and calcareous grasslands beside the River Avon.	1.7km west
Garsdon Mill Wood	LWS	Wet alder woodland in low lying areas and spreads alongside the Charlton stream.	1.6km east
Hyam Farm Meadows	LWS	Two fragments of species-rich grassland.	1.8km south-west

2.2 *Habitats within the Site boundary*

2.2.1 Habitat descriptions are provided below; these should be read in conjunction with the UKHabs habitat map and accompanying Target Notes [TN] and photographs; refer to Figure 3. 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 comprised three fields of modified grassland, bound predominantly by species-rich native hedgerows, some containing mature broadleaved trees. One further mature tree was present within grassland in the southernmost field. A drainage ditch was present along the north-western boundary and a small parcel of broadleaved woodland was recorded within a corner of the in the southernmost field.

Broadleaved woodland

2.2.3 A small area of secondary broadleaved woodland was present in the southeast of the Site. This was dominated by hazel, sycamore and field maple and also included elm and hawthorn.

Ditch

2.2.4 A ditch approximately 0.5-1m wide occurred along part of the north-western boundary of the Site [TN2]. This was damp at time of survey (July 2024) although did not contain standing water; however, it was considered likely to hold water for at least four months of the year. Vegetation on the banks included frequent to abundant soft rush, common sorrel, common nettle and broad-leaved willowherb.

Hedgerows

- 2.2.5 Species-rich and species-poor native hedgerows formed field boundaries throughout the Site. These contained occasional mature standing broadleaved trees. Hedgerow species included blackthorn, hawthorn, elm, elder, ash, dog rose, pedunculate oak and field maple. Six of the hedgerows within the Site were assessed as being 'important' under the ecological criteria of the Hedgerow Regulations 1997 (as amended); refer to Appendix 5.

Modified grassland

- 2.2.6 Cattle-grazed modified grassland dominated the Site. Species present included perennial ryegrass, meadow foxtail, white clover, meadow buttercup, dandelion, Yorkshire-fog, broad-leaved dock, curled dock, smooth meadow-grass, red fescue, hard rush, daisy, common sorrel, bulbous buttercup, common mouse-ear and red clover. A small, lower-lying area of wet grassland was present in the east of the Site [TN1]; this contained abundant floating sweet-grass and duckweed species.

2.3 Adjacent and surrounding habitats

- 2.3.1 The Site was bordered to the west by new residential estates, and to the north, east and south by agricultural land; predominantly modified grassland bordered by hedgerows. The B4014 bordered the northern boundary of the Site, and the A429 bordered to the east. A water tower and single dwelling were located immediately adjacent to the east of the Site boundary, and a farm complex including a small parcel of broadleaved woodland was located to the south. In a broader context, the Site was surrounded by an existing urban area to the west and south-west, and agricultural/grassland fields bordered by hedgerows and fragments of woodland to the north and east.

2.4 Protected and notable species*Plants**Desk Study*

- 2.4.1 A range of notable plant species have been recorded within the 2km study area including:
- English bluebell (WCA 8; receives limited legal protection);
 - Spreading bellflower (Priority Species, IUCN Endangered and Nationally Scarce);
 - Cornflower and shepherd's-needle (Priority Species);
 - Corn chamomile (IUCN Endangered);
 - Fritillary, northern yellow-cress, hoary mullein, Welsh poppy, round-leaved mint, greater broomrape, yellow vetchling, large-leaved lime and fringed water-lily (Nationally Scarce); and
 - Fat duckweed, lesser bulrush, common cotton-grass, flattened meadow-grass, yellow-juiced poppy, sweet-briar, green field speedwell, pink water-speedwell, wild clary, bird's-foot, little mouse-eat, treacle mustard, cotton thistle, fine-leaved water-dropwort, river water-dropwort, fennel, great yellow-cress, keeled-fruited cornsalad, narrow-leaved birds-foot, smooth brome, Cyperus sedge, rats-tail fescue (Wiltshire Notable plant species).
- 2.4.2 There were no previous records of legally-controlled invasive plant species from the study area.
- Site survey*
- 2.4.3 No notable or legally-controlled invasive plants were recorded within the Site and the presence of such species was considered unlikely.

Invertebrates

Desk Study

2.4.4 A range of notable invertebrate species have been recorded from the 2km study area including:

- White-clawed crayfish (legally protected Priority Species);
- Hill cuckoo bee, Trimmer's mining bee, red tailed damson bee, *Crossocerus binotatus* (a digger wasp), median wasp and spindle knot horn (Nationally Notable);
- August thorn species, beaded chestnut, brindled beauty, centre-barred sallow, dot moth, Duke of Bergundy, dusky brocade, dusky thorn, ghost moth, green-brindled crescent, grizzled skipper, knot grass, lackey, mouse moth, oak hooked tip, wall, white-letter hairstreak, blood-vein, buff ermine, cinnabar, figure of eight, grey dagger, mottled rustic, rosy rustic, rustic, September thorn, feathered gothic, white ermine, small phoenix, small square-spot, small emerald, shaded broad-bar (Priority Species);
- White-letter hairstreak (IUCN Endangered);
- Wall, Adonis blue (IUCN Near Threatened).

Site survey

2.4.5 Trees, hedgerows, ditch and modified grassland within the Site provided potential habitat for a range of common invertebrate species. The presence of significant populations of notable invertebrates was considered unlikely. The ditch was unsuitable for white-clawed crayfish due to the lack of water for much of the year, the soft substrate and lack of suitable refuges.

Amphibians

Desk Study

2.4.6 There are numerous records of great crested newt (GCN) from the 2km study area; the closest record is from 600m west of the Site. GCN is a fully protected Priority Species and Wiltshire BAP Species. Common toad, a Priority Species and Wiltshire BAP species, has also been recorded from the study area.

2.4.7 A desk-based study was undertaken to locate ponds and other potential waterbodies within 250m of the Site, that may provide suitable breeding habitat for GCN. Three ponds/waterbodies (Ponds 1-3) were provisionally identified; refer to Appendix 6.

Site survey

2.4.8 Of the three ponds within 250m of the Site (refer to Paragraph 2.4.7 and Appendix 6), Pond 2 was assessed as having 'Average' suitability for GCN. An environmental DNA (eDNA) survey of this pond undertaken in 2020 did not detect the presence of GCN eDNA, this species was therefore assumed to be absent. Ponds 1 and 3 were found to be dry in 2020 and therefore unsuitable for GCN, consequently no further survey was undertaken.

2.4.9 Due to seasonal constraints, it was not possible to update the GCN survey in advance of the planning application submission. An update GCN survey of all ponds within 250m of the Site, to include HSI and eDNA sampling where appropriate, will be undertaken in April 2025, and the results submitted as an Addendum to the EclA in June 2025. However, based on the negative eDNA result from Pond 2, and the unsuitability of Ponds 1 and 3 for breeding GCN at the time of survey, the lack of previous GCN records from these ponds, and their separation from the Site by roads/residential development (which create barriers to dispersal), the presence of GCN within the Site was considered very unlikely.

- 2.4.10 Grassland and hedgerows within the Site provided suitable terrestrial habitats for common amphibian species such as common toad.

Reptiles

Desk Study

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

Site survey

- 2.4.12 'Low' populations of slow-worm and grass snake (based on Froglife (1999) criteria), were recorded within the Site in 2020; refer to Appendix 7.
- 2.4.13 Due to seasonal constraints, it was not possible to update the reptile survey in advance of the planning application submission. An update reptile survey of the Site will be undertaken in April/May 2025, and the results submitted as an Addendum to the EclA in June 2025. As the 2024 update habitat survey of the Site did not identify any significant habitat changes since 2020, this is not considered to be a significant limitation and the baseline with respect to reptiles is likely to remain the same.

Birds

Desk Study

- 2.4.14 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 (Eaton *et al* 2015); 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	✓			✓
Brambling	✓			
Fieldfare	✓		Red	
Grey wagtail			Red	
Grey partridge		✓	Red	
Hawfinch		✓	Red	
Herring gull			Red	
Hobby	✓			
House sparrow		✓	Red	
Kestrel			Amber	
Kingfisher	✓			✓
Merlin	✓		Red	
Lesser redpoll		✓	Red	
Linnet		✓	Red	✓
Little egret				
Marsh tit		✓	Red	
Mistle thrush			Red	
Peregrine	✓			
Purple heron	✓			

Table 2.2: Notable bird species recorded in study area

Species	Schedule 1 ¹	Priority Species	BoCC ²	Wiltshire BAP
Red kite	✓			
Redwing	✓		Red	
Reed bunting		✓	Amber	✓
Ring ouzel		✓	Red	
Skylark		✓	Red	✓
Song thrush		✓	Red	✓
Spotted flycatcher		✓	Red	✓
Starling			Red	
Tree pipit		✓	Red	
Whimbrel	✓		Red	
Yellowhammer		✓	Red	

Conservation status: 1 Listed on Schedule I of the Wildlife and Countryside Act 1981 (as amended), 2 Listed on RSPB's 'Birds of Conservation Concern (Eaton *et al* 2015)' Red/Amber Lists

Site survey

2.4.15 A total of 23 species were recorded during the course of the breeding bird survey undertaken in 2020 (refer to Appendix 8), of which 16 species were confirmed, probably or possibly breeding within the Site. These included:

- Linnet and house sparrow, which possibly bred. These are both Priority Species and Red-listed Birds of Conservation Concern (Eaton *et al* 2015).
- Dunnock, which was confirmed breeding. This is an Amber-listed Bird of Conservation Concern and Priority Species.
- Stock dove, which possibly bred. This is an Amber-listed Bird of Conservation Concern.

2.4.16 Trees and hedgerows within the Site provided suitable nesting bird habitat. Kestrel was recorded foraging onsite only; peregrine falcon was not recorded during the breeding bird survey.

2.4.17 Due to seasonal constraints, it was not possible to update the breeding bird survey in advance of the planning application submission. An update breeding bird survey of the Site will be undertaken between April and June 2025, and the results submitted as an Addendum to the EclA in June 2025. As the 2024 update habitat survey of the Site did not identify any significant habitat changes since 2020, this is not considered to be a significant limitation. and the baseline with respect to birds is likely to remain very similar.

Badger

Desk Study

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

Site survey

2.4.19 One partially-used outlier badger sett with a single entrance hole was recorded on the south-western boundary of the Site; refer to Appendix 10. Other evidence of badger activity within the Site was recorded, including paths. The grassland, woodland and hedgerows provided suitable foraging habitat for badger throughout the Site. No significant changes to the status of the badger sett or levels of badger activity within the Site were recorded between surveys in 2020 and 2024.

Hazel dormouse*Desk Study*

- 2.4.20 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

- 2.4.21 No evidence of hazel dormouse was recorded during the nest-tube survey in either 2020 or 2024; refer to Appendix 9. This species was considered to be absent from the Site.

Bats*Desk Study*

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

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

- 2.4.23 There are historic records (1988) of brown long-eared bat and pipistrelle bat species roosts within a 700m radius of the Site, however the exact locations are withheld by Wiltshire & Swindon Biological Records Centre.

*Site survey**Roost surveys of trees*

- 2.4.24 All trees within the Site were subjected to a ground-level tree assessment (GLTA) in 2024 to evaluate their potential for supporting roosting bats, in accordance with BCT Guidelines (2023); refer to Appendix 12. Two trees were identified as having potential roosting features for bats (provisionally assessed as PRF-M; refer to Appendix 12).
- 2.4.25 Neither of these trees would be directly affected by the development proposals, however indirect effects were considered possible. Dusk emergence and dawn re-entry surveys undertaken of these trees in 2020 did not identify any evidence of roosting bat roosts. Aerial tree climbing surveys were commenced in 2024; the climbing surveys completed in August and September 2024 did not record evidence of roosting bats. One further climbing survey visit will be undertaken in May 2025, and the results will be submitted as an Addendum to the EcIA in June 2025. However, on the basis of surveys completed to date, the presence of bat roosts within these trees is considered unlikely.

Activity survey – transect survey / Nighttime Bat Walkover (NBW) survey

- 2.4.26 Due to seasonal constraints, it has not been possible to complete the full seasonal coverage of update bat activity surveys required by current survey guidance (Collins 2023). Further survey is scheduled for the months of April, May and June 2025, and the results and assessment of effects will be submitted to Wiltshire Council as an Addendum to the EcIA. It was therefore considered appropriate to include survey data from both 2020 and 2024 within this EcIA. However, due to changes in survey methodology arising from revised best practice guidance (BCT 2016 and Collins 2023) between the survey years, the 2020 survey data is not directly comparable with the update surveys undertaken in 2024; refer to Appendix 11.
- 2.4.27 At least five bat species were recorded during the 2020 bat transect surveys, with the majority of calls (53%) from common pipistrelle, followed by noctule (18%) and soprano pipistrelle (16%). Other bat species included Myotis species (10%) and serotine (3%). Elevated levels of bat activity

were recorded in three core areas: along the north-eastern hedgerow boundary where the two fields meet; alongside hedgerows in the west of the Site; and in the sheltered south-west corner of the Site adjacent to the offsite woodland.

- 2.4.28 At least three bat species were recorded during the 2024 Nighttime Bat Walkover surveys, with the majority of calls from common pipistrelle and soprano pipistrelle bats. The majority of activity was concentrated around mature trees providing a sheltered foraging area. A small number of *Myotis* sp. calls (three registrations) were recorded from bats commuting and foraging along boundary hedgerows in August only.

Activity survey – static detector survey

- 2.4.29 At least 10 bat species were recorded during the 2020 static detector survey with an overall total of 40,968 registrations across the four static detector positions. In 2024, at least eight bat species were identified during the static detector surveys, with a cumulative total of 46,378 registrations recorded across six static detector locations. The frequency and distribution of bats within the Site in both 2020 and 2024 was similar.
- 2.4.30 Common pipistrelle accounted for the highest number of registrations during both survey years (>61%), followed by *Myotis* species, soprano pipistrelle and noctule. Other species recorded but accounting for less than one percent of the registrations included serotine, barbastelle, *Nyctalus* species, lesser horseshoe bat, greater horseshoe bat, *Nathusius'* pipistrelle and long-eared bat. No greater horseshoe bats were recorded in 2024, compared with two registrations recorded in 2020.
- 2.4.31 During the static detector surveys, the highest levels of activity were recorded along the eastern boundary of the northern field recorded in both 2020 and 2024, where *Myotis* bat activity was also highest. Activity levels at all other locations was significantly lower for most species.
- 2.4.32 Light-averse bat species recorded within the Site included *Myotis* bat, long-eared bat, lesser horseshoe, greater horseshoe and barbastelle. Activity levels for most of these species was highest along the eastern boundary of the northern field, which correlated with the area where overall bat activity levels were highest. This location appears to be located at the greatest distance from potential sources of light spill i.e. roads and residential/commercial development.

Otter

Desk Study

- 2.4.33 Otter, which is a legally protected Priority Species and a Wiltshire BAP Species, has been recorded from the study area. The records are associated with the River Avon >450m south-west of the Site.

Site survey

- 2.4.34 No evidence of otter was recorded within the Site. The ditch on the north-western boundary of the Site was considered unlikely to be regularly 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

- 2.4.35 Water vole, which is legally protected, a Priority Species and a Wiltshire BAP Species, has been recorded within the study area, with the nearest records from Conygre Mead 400m to the south of the Site.

Site survey

- 2.4.36 The ditch on the north-western boundary of the Site was considered to provide sub-optimal habitat for water vole due to the absence of standing water for the majority of the year and only low water levels during wetter months. The water vole survey visit undertaken in 2024 did not record evidence of water vole; one further survey visit will be undertaken in May 2025 and the results will be submitted as an Addendum to the EclA in June 2025. However, on the basis of low habitat suitability and surveys completed to date, the presence of water vole onsite is considered unlikely.

Beaver*Desk study*

- 2.4.37 There is one record of beaver, from the study area. The record was associated with the River Avon, 960m south of the Site. Beaver is a legally protected species.

Site survey

- 2.4.38 The ditch on the north-western boundary of the Site was considered unsuitable for beaver due to the absence of standing water for the majority of the year, and only low water levels during wetter months.

Other mammals*Desk Study*

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

Site survey

- 2.4.40 There was suitable habitat for hedgehog within the Site, and its presence was assumed. Habitats were sub-optimal for brown hare and harvest mouse, and the presence of these species was 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>			
North Meadow and Clattinger Farm SAC	International	Yes	Valuation reflects designation. Potential for recreational impacts as a consequence of the development.
Conygre Mead LNR/LWS	District	Yes	Valuation reflects designation. Potential for pollution effects and recreational impacts as consequences of the development.
Bristol Avon River LWS	District	Yes	Valuation reflects designation. Potential for pollution effects as a consequence of the development.
Cloatley Manor Farm Meadows SSSI	National	No	Valuation reflects designation. No mechanisms or pathways identified likely to affect this site.
Corston Quarry and Pond LNR	District	No	Valuation reflects designation. No mechanisms or pathways identified likely to affect this site.
Other LWS within 2km	Parish to District	No	Valuation reflects designation. No mechanisms or pathways identified likely to affect these sites.
<i>Habitats on the Site</i>			
Broadleaved woodland	Parish	Yes	Corresponded to the Priority Habitat 'Lowland mixed deciduous woodland' and forms part of the wider ecological network. Retained but potentially indirectly impacted by development.
Ditch	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. Likely to be directly impacted by the development.
Modified 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.

Table 2.3: Evaluation and confirmation of important ecological features

Ecological feature	Ecological importance	Included in detailed assessment?	Reason
<i>Adjacent habitats</i>			
Grassland, hedgerows and woodland	Parish	Yes	Form part of the wider ecological network and include the Priority Habitats: lowland mixed deciduous woodland and hedgerows. 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 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	Sub-Parish (valuation based on 2020 survey data; subject to confirmation following update survey)	Yes	Presence of great crested newt considered very unlikely. No breeding habitat within Site, however there was terrestrial habitat suitable for common and widespread amphibians. Potentially impacted by the development.
Reptiles	Sub-Parish (valuation based on 2020 survey data; subject to confirmation following update survey)	Yes	Low populations of slow-worm and grass snake were recorded within the Site. Potentially impacted by the development.
Birds	Sub-Parish (valuation based on 2020 survey data; subject to confirmation following update survey)	Yes	The Site contained suitable foraging and nesting habitat for a limited range of breeding bird species, including widespread but declining species such as house sparrow, linnet and stock dove. Potentially impacted by the development.
Badger	Sub-Parish	Yes	One partially-used outlier sett recorded within the Site. Habitats were suitable for foraging badgers. Potentially impacted by the development.
Hazel dormouse	Negligible	No	No evidence of hazel dormouse was recorded on Site. This species is therefore considered to be absent from the Site.
Bats	Parish (valuation based on 2020 survey data and	Yes	No bat roosts identified. At least 10 species were recorded commuting/foraging, although activity was dominated by common pipistrelle. Records of greater

Table 2.3: Evaluation and confirmation of important ecological features

Ecological feature	Ecological importance	Included in detailed assessment?	Reason
	partial update survey; subject to confirmation following final update surveys)		horseshoe, lesser horseshoe, barbastelle and long-eared bat accounted for fewer than 1% of registrations. Commuting/foraging bats potentially impacted by the development.
Otter	Negligible	No	Ditch within the Site was considered unsuitable for otter due to the absence of standing water for the majority of the year.
Water vole	Negligible (valuation based on 2020 survey data and partial update survey; subject to confirmation following update survey)	No	Water vole was assumed to be absent from the Site due to the sub-optimal habitat present and surveys results to date.
Beaver	Negligible	No	Ditch within the Site was considered unsuitable for beaver due to the absence of standing water for the majority of the year.
Other mammals	Sub-Parish	Yes	Hedgehog, a Priority Species, was assumed to occur within the Site. Potentially impacted by development.

3 Assessment of ecological effects

3.1 *The proposed development*

Development description

- 3.1.1 The proposed development comprises an Outline Planning Application for residential development, including the construction of up to 149 dwellings, the creation of a new vehicular access with footways and cycle ways and ancillary road infrastructure, public open space, children's play area, allotments, landscape planting, surface water attenuation and associated infrastructure.

Ecological design and avoidance measures

- 3.1.2 The proposed development would include the following features (refer to Figures 2 and 4):
- New habitat creation to include native broadleaved woodland, wildflower grassland, native scrub and orchard planting, as well as SuDS ponds with associated wetland meadow seeding and marginal vegetation planting;
 - Existing boundary hedgerows to be retained and buffered from new development as far as possible, and new boundary hedgerows to be planted along currently undefined sections of the Site boundary to strengthen the existing habitat network for bats and other species;
 - Creation of significant landscape buffers along the southern, western and northeastern Site boundaries, including woodland planting, wildlife grassland and SuDS ponds, which will provide functional 'habitat corridors' for a range of species;
 - Provision of bat tubes/boxes and bird boxes within the fabric of new buildings and on retained trees;
 - Hedgehog passes within residential garden fences;
 - Creation of a minimum of three reptile hibernacula within the Public Open Space; and
 - Provision of insect/ bee bricks within new dwellings and walls, located in proximity to suitable pollinator habitat.
- 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

- 3.2.1 Without appropriate mitigation, there is a potential risk that Conygre Mead LNR/LWS and Bristol Avon River LWS could be affected by pollutants within run-off leaving the Site. 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, measures are proposed to ensure that this risk would be avoided/mitigated; refer to Paragraph 4.1.2.
- 3.2.2 No mechanisms or pathways have been identified, which are likely to affect any other designated sites during the construction phase.

Habitats on the Site

- 3.2.3 Based on the indicative development proposals (refer to Figure 2 and 4), Site clearance (including for development and green infrastructure) would result in the removal of the following habitats (all measurements are approximate):
- Modified grassland (12.2ha).
 - Species-rich hedgerow (160 linear metres).
- 3.2.4 The loss of the above habitats would be partially mitigated on-Site 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 Without mitigation, there is the risk that pollution arising from construction, for example as a result of an accidental fuel spillage or sediment-laden run-off, could affect the water quality of the ditch along the northwestern Site boundary. Refer to Paragraph 4.1.4 for proposed mitigation.
- 3.2.6 Construction also could result in impacts to the retained trees 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 dust, which could have an adverse effect on plants through interference with photosynthesis, respiration and transpiration. 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 Dust and pollutants produced by construction activities could potentially affect adjacent trees and hedgerows; refer to Paragraph 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 mitigated in the medium to long-term by the implementation of the landscape and drainage proposals.

Amphibians

- 3.2.9 Construction would result in the loss of terrestrial habitat suitable for common amphibians, and there is the potential that individual amphibians could be killed or injured during Site clearance; refer to Paragraphs 4.1.7 - 4.1.9 for proposed mitigation.

Reptiles

- 3.2.10 Removal of grassland and hedgerow sections would lead to a reduction in foraging and breeding habitat for slow worm and grass snake. It could also result in direct effects (e.g., killing/injury). Mitigation measures would be implemented to ensure legal compliance; refer to Paragraphs 4.1.7 - 4.1.9.

Birds

- 3.2.11 Depending on the timing of Site clearance, there could be a direct effect on nesting birds, their eggs and young. Avoidance and mitigation measures are proposed to ensure legal compliance; refer to Paragraphs 4.1.10 - 4.1.11. Habitat clearance, particularly hedgerow removal, would result

in the loss of nesting and foraging habitat used by a range of common/widespread species. This would be mitigated by new habitat creation in the medium-term onwards.

- 3.2.12 Removal of grassland would lead to a reduction in available foraging habitat for common/widespread bird species and species of conservation concern. 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.

Badger

- 3.2.13 The outlier badger sett recorded within the southwestern boundary hedgerow of the Site would not be directly affected by the development proposals. There will be a minimum 20m buffer between the setts and the development footprint; refer to Figure 5 and Paragraph 4.1.13.
- 3.2.14 The development would result in the loss of hedgerow and grassland habitats that are likely used as foraging and movement corridors for badgers, although alternative habitat of a similar or higher value is available in the vicinity. Badgers could also become trapped in open excavations during the construction phase and potentially be harmed by construction materials. Mitigation is proposed to ensure legal compliance and protect animal welfare; refer to Paragraphs 4.1.12 - 4.1.14.

Bats

- 3.2.15 The hedgerow network, which provided flight-lines and foraging habitat for bats, would be predominantly retained. However, Site clearance would result in the removal of 160m of hedgerow over several sections to facilitate vehicular and pedestrian accesses, resulting in the degradation of their function as bat commuting / foraging corridors. Habitat removal elsewhere would further reduce the value of the Site to bats. Loss of hedgerows and grassland would be partially-mitigated in the long term by the habitat creation proposals; refer to Figures 4 and 5.
- 3.2.16 Lighting associated with the construction phase has the potential to disrupt foraging activity for 'light-averse' bat species such as horseshoe bats, barbastelle and Myotis species; refer to Paragraph 4.1.15 for proposed mitigation. No bat roosts would be affected.

Other mammals

- 3.2.17 Site clearance would result in the loss of habitats suitable for hedgehogs, and there is also potential for direct impacts (i.e. killing or injury) on hedgehogs during Site clearance; refer to Paragraphs 4.1.17 for proposed mitigation.

3.3 Post-construction effects

Designated sites of nature conservation importance

- 3.3.1 North Meadow and Clattinger Farm SAC lies approximately 8.1km to the north-east of the Site at its closest point. The North Meadow and Clattinger Farm SAC Interim Recreation Mitigation Strategy (Gallagher et al, 2023) identifies the potential for impacts to the SAC arising from recreation. However, this document states that only the North Meadow component of the SAC is subject to damaging recreational pressures and identifies a 9.4km zone of influence for the North Meadow component, which lies approximately 16.2km from the Site. Therefore, recreational impacts are unlikely to occur as a result of the proposed development and it is considered there would be no risk or probability of a likely significant effect on the SAC.

- 3.3.2 The development would include an integrated SUDS scheme to 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. This would ensure that there was no negative effect on Conygre Mead LNR/LWS and Bristol Avon River LWS during the operation of the Site.
- 3.3.3 The proximity of Conygre Mead LNR could mean that the site receives increased recreational pressure as result of the development. However, LNRs are designated, in part, to provide opportunities for the public to engage with nature and are managed for recreational access. Significant negative recreational impacts are therefore considered to be unlikely with respect to this site.
- 3.3.4 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

- 3.3.5 The proposed approach to the landscape and ecological design for the development is summarised in Paragraph 3.1.2. Full details of onsite habitat creation would be specified in a Detailed Landscape Planting Plan and would include native broadleaved woodland, wildflower grassland, native scrub and orchard planting within the Public Open Space (refer to Figures 4 and 5). Habitat loss would comprise predominantly modified grassland, a habitat of low ecological importance, and hedgerow loss (of higher ecological importance) would be minimised and mitigated through new hedgerow creation. New woodland and wildflower meadow would enhance the biodiversity value of the Site as these habitats established.
- 3.3.6 The calculation in change in habitat value through the Statutory Biodiversity Metric confirms that the onsite habitat creation proposals, based on the Land Use Parameter Plan (Figure 4) would deliver a net gain of +10.51 Habitat Units (40.38%), a net gain of +4.35 Hedgerow Units (+28.77%) and a net gain of +0.8 Watercourse Units (+15.01%).
- 3.3.7 New and retained hedgerows onsite could be subject to interference/removal by new homeowners whose gardens abut the hedgerow, affecting their structure and functionality. Proposed mitigation is identified in Paragraph 4.2.3.

Habitats adjacent to the Site

- 3.3.8 No significant effects on adjacent habitats are predicted.

Protected and notable species

Invertebrates

- 3.3.9 The proposed onsite habitats would provide suitable habitat for a range of invertebrates, including notable species.

Amphibians

- 3.3.10 Retained hedgerows would continue to provide suitable movement corridors around the Site for amphibians. Once established, residential gardens, new hedgerows and wildflower grassland would provide suitable terrestrial habitat for amphibians, and the SUDS features would provide potentially suitable breeding habitat.

Reptiles

- 3.3.11 New hedgerows, wetland and wildflower grassland and the SUDS features would provide suitable foraging, hibernating and basking habitat for reptiles, once established, and the presence of reptiles would be taken into account during landscape management. Creation of reptile hibernacula within the Public Open Space would also provide suitable habitat for hibernating reptiles.

Birds

- 3.3.12 Native tree, scrub and hedgerow planting would result in an increase in habitat available for nesting birds, and nesting boxes would benefit a range of species, including Species of Conservation Concern / Priority Species such as house sparrow and swift. Residential gardens would also be likely to provide suitable foraging and nesting habitat as they became established.
- 3.3.13 It would be expected that a proportion of residents within the new development would own cats, and therefore local bird populations may also be adversely affected by increased predation. However, it would be expected that a proportion of residents 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). There is likely to be a change of species composition from an 'agricultural' species assemblage to a more 'urban' species assemblage.

Badger

- 3.3.14 Built-form and hardstanding within the Site would be over 20m from the outlier badger sett within 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. However, as the new roads would be restricted to low-speed limits, the risk of collisions is unlikely to increase significantly. 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.

Bats

- 3.3.17 Retained habitat, including the hedgerow network and broadleaved woodland, would continue to provide suitable foraging habitat and functional flight routes for bats from within the Site to the wider landscape. The green infrastructure proposals include the creation of significant landscape buffers along the southern, western and northeastern Site boundaries, including woodland and hedgerow planting, which would buffer these linear features from the development and provide robust functional flight routes for bats, including light-sensitive species. New habitat planting of wildflower meadow, scattered trees, broadleaved woodland and attenuation basins would also provide suitable foraging habitat for bats across the Site.
- 3.3.18 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). These species are likely to continue to forage over the urban areas of the Site and are unlikely to be significantly impacted by public-realm lighting. 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 flight-paths with such species likely to avoid illuminated areas (Jones 2000, Stone 2013). Given the 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.

Other mammals

- 3.3.19 Hedgehogs are likely to use gardens and newly created habitats within the Site for foraging and shelter once they become established. However, close-board fences are likely to impede the movement of hedgehogs between gardens; proposed mitigation is outlined in Paragraph 4.2.12.
- 3.3.20 The presence of roads within the Site is considered unlikely to result in a significant increase in hedgehog mortality as the new roads would be subject to low traffic volumes, travelling at low speeds.

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. The 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

- 4.1.2 The pollution-prevention measures outlined in Paragraph 4.1.4 would ensure that there was no risk of potential construction effects on Conygre Mead LNR/LWS and 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'. All retained hedgerows, trees and 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 within the Site boundary, but away from hedgerows and outside of tree RPAs. These measures would be specified in the CECoMP.
- 4.1.4 Construction would be undertaken in accordance with Defra pollution prevention guidance (<https://www.gov.uk/guidance/pollution-prevention-for-businesses>). A Construction Environmental Management Plan (CEMP) would be prepared and agreed prior to the commencement of construction that would specify pollution-control measures, including measures to prevent runoff leaving the Site and entering the adjacent ditch. Method statements for high-risk activities, such as refuelling and use of concrete, would also be included within the CEMP.

Protected and notable species

Invertebrates

- 4.1.5 Retention of the broadleaved woodland and trees and the majority of mature hedgerows and the protection of these habitats (refer to Paragraph 4.1.3) would ensure that the principal habitat 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; refer to Figure 5. 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.

Reptiles and amphibians

- 4.1.7 Habitats where amphibians and reptiles were found, or assumed to be present, would be subject to habitat manipulation prior to construction to prevent killing/injury of reptiles during Site clearance. This would involve two-stage cutting any time between late March and early October:

- Grassland within 5m of field margins would first be cut to 150mm and then left for a week, to allow reptiles to move into adjacent retained habitats.
- After a week, the grassland would be cut to ground level to discourage reptiles from re-entering the cut areas.

4.1.8 The topsoil would subsequently be stripped from the area, rendering it unsuitable for reptiles. The ECW would undertake a watching brief during the topsoil strip of field margins to search for any remaining reptiles present; any reptiles found would be moved by the ecologist to suitable retained habitat in the vicinity. Retained hedgerows would be protected during construction (refer to Paragraph 4.1.3).

4.1.9 Three hibernacula would be created, located in suitable habitat within Public Open Space, which would enhance the new habitats on Site for reptiles until they became established; refer to Figure 5.

Birds

4.1.10 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 ecologist may establish a buffer zone around the nest (e.g. 5m) to minimise the risk of accidental damage/destruction.

4.1.11 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; refer to Figure 5. These would be suitable for use by swift, which is an 'Amber' Species of Conservation Concern (Eaton et al 2015) 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 of boxes would be detailed in the CECoMP.

Badger

4.1.12 Prior to the start of construction, an update survey of the Site would be undertaken to confirm the status of sett within the Site. Where the retention of this sett, or any other setts identified, 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.

4.1.13 Exclusion Zones marked by post and rail fencing (or similar) would be set out at a 20m radius around any retained active badger setts prior to construction to avoid any accidental damage of these setts; refer to Figure 5.

4.1.14 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 will be stored in secure sites within the construction compound, and no fires would be lit.

Bats

- 4.1.15 During construction, all contractors' compounds would be located a minimum of 10m away from retained trees and hedgerows to minimise potential lighting and disturbance impacts on commuting/foraging bats. 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.
- 4.1.16 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 opportunities for bats; refer to Figure 5. Boxes would be integrated into the building's walls at a minimum height of 3m, close to eaves, avoiding north facing elevations with limited fenestration and in proximity to green infrastructure. The number, specifications and exact locations would be included the CEcoMP.

Other mammals

- 4.1.17 Clearance of hedgerow sections would be preceded by a hand search for hedgehogs by an ecologist (at the same time as a search for reptiles and amphibians; refer to Paragraphs 4.1.7 - 4.1.8). Any animals found would be moved to suitable retained habitat adjacent to the works 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 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 in agreement with Wiltshire Council.
- 4.2.3 The final development layout would seek to avoid hedgerows backing on to new and retained hedgerows as far as possible, in accordance with the Illustrative Masterplan (Figure 2). Where this could not be avoided, residential garden boundaries would be protected by a 1.2m-1.8m post and wire-mesh fence. The wire mesh would allow vegetation to grow through whilst also protecting the integrity of the developing hedgerow.

Protected and notable species*Invertebrates*

- 4.2.4 Habitats will 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; refer to Figure 5.

Amphibians and reptiles

- 4.2.5 Habitats would be managed in accordance with the LEMP, which would include habitat management measures designed to benefit reptiles and amphibians. Although the primary function of the proposed SUDS features is for surface-water attenuation, wherever possible, they would be managed to maximise its value to amphibians through restricting the timing of any required works to avoid the amphibian breeding season (approximately February to June).

Birds

- 4.2.6 Bird boxes within buildings are designed to be maintenance-free and no management would be required; refer to Figure 5. Measures to avoid impacts on nesting birds during landscape management works will also be included in the LEMP.

Badger

- 4.2.7 Details of the management of habitats adjacent to the retained sett and the avoidance of associated disturbance actions would be set out in the LEMP. The lighting parameters set out in Paragraphs 4.2.9 - 4.2.10 would avoid adverse effects on badger movement and foraging.

Bats

- 4.2.8 Bat boxes within buildings are designed to be maintenance-free and no management would be required; refer to Figure 5.
- 4.2.9 The detailed lighting design for the development would ensure that lighting impacts on bats were minimised. The design would seek to follow BCT/ILP guidance (2018) recommendations to prevent light spill onto new and retained habitats. Lighting would be designed to direct light away from Site boundaries and new and retained hedgerows. Lighting along roads and footpaths, where required, would be kept to the minimum required for security and public health and safety, and avoided as far as possible within the public open space.
- 4.2.10 Measures that could be provided to minimise lighting impacts include:
- Narrow Spectrum lights with no ultraviolet (UV) content.
 - Luminaires with a restricted upward light ratio.
 - Directional downlights - illuminating below the horizontal plane.
 - Height of light units minimised (whilst ensuring light does not spill above horizontal plane).
 - Avoidance of upward light (e.g. ground-mounted floodlights up-lighting trees, buildings and vegetation).
 - Variable lighting regimes (motion sensors or part-night lighting) in areas close to Site boundaries.
 - Use of fore/rear shields to restrict light direction used as a last resort only.
- 4.2.11 The final lighting design would be reviewed by a suitably qualified ecologist and would be subject to approval by Wiltshire Council, for example through an appropriate Planning Condition.

Other mammals

- 4.2.12 Hedgehog passes would be created within new garden fences at the time of construction 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.

4.3 Ecological monitoring

- 4.3.1 An Ecological Clerk of Works (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 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 and management measures. The mandatory BNG condition would be automatically applied to the planning permission.
- 4.4.2 The temporary or permanent closure of badger setts, if required, could be secured through a Natural England Badger Development Licence or Low Impact Class Licence; both are legally-binding documents.

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.

5.2 *Cumulative effects*

- 5.2.1 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. No negative cumulative effects on habitats would occur.
- 5.2.2 Whilst residual negative effects on badgers are identified, any cumulative effects would not be above the levels identified for these species groups in isolation i.e. cumulative effects would remain as Sub-Parish and would not be significant.

5.3 *Conclusion*

- 5.3.1 On the basis of the implementation of all avoidance, mitigation, compensation and enhancement measures identified in this report, all long-term effects on habitats and species would be neutral or positive, apart from on badger; whilst this would be a long-term negative effect, it would be at Sub-Parish level and would not be significant.
- 5.3.2 The proposed development would avoid significant ecological harm and could deliver an overall biodiversity net gain of over 10% (40.38% in Habitat Units, 28.77% in Hedgerow Units and 15.01% in Watercourse Units). The proposed development could be undertaken in accordance with relevant national and local biodiversity planning policies, and with wildlife legislation relating to designated sites, Biodiversity Net Gain and protected species.

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 14. The Habitat Condition Assessment undertaken on 31 July 2024 represents the pre-development biodiversity value of the onsite habitats at the date of the Application. No destructive or degrading activities have taken place which would impact the biodiversity and no irreplaceable habitat occurs on the land to which the planning application relates.
- 5.4.2 An indicative Biodiversity Net Gain (BNG) Assessment has been produced for the illustrative development proposals; refer to Appendix 14 and the Statutory Metric that has been submitted separately. The BNG Assessment confirms that the proposed development could deliver a net gain of +10.51 Habitat Units (40.38%), a net gain of +4.35 Hedgerow Units (+28.77%) and a net gain of +0.8 Watercourse Units (+15.01%). The assessment complies with all BNG-trading rules.

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			
North Meadow and Clattinger Farm SAC	No effects predicted.	n/a	Neutral, not significant.
Bristol Avon River LWS; Conygre Mead LNR/LWS	Potential for negative effects from pollution (construction phase) and drainage (operational phase).	Construction works would be undertaken in accordance with Defra pollution prevention guidance. The proposed SUDS design would ensure no deterioration of surface water quality leaving the Site post-construction.	Neutral, not significant.
Habitats			
Habitats within footprint of development including modified grassland and hedgerow.	Removal during Site clearance.	Loss mitigated through new habitat creation in the medium-term, including SuDS ponds, new wildflower meadow and native woodland and trees. Management of habitats in accordance with LEMP.	Negative, medium-term effect at Sub-Parish level; not significant. Positive effect at Sub-Parish level in long-term through creation of new habitats.
Retained hedgerows and hedgerow trees	Accidental damage during construction.	Protective fencing around retained hedgerows and trees; all works undertaken in accordance with BS 5837:2012.	Neutral, not significant.
Protected and notable species			
Amphibians and reptiles	Potential killing/injury and loss of terrestrial habitat for small numbers of common amphibians (excluding great crested newt). Potential killing/injury and habitat loss for small numbers of reptiles (slow-worm and grass snake).	Habitat manipulation would prevent direct impacts during construction. New habitat creation and hibernacula provision would be suitable for reptiles and amphibians.	Negative, short-term effect at Sub-Parish level. Minor positive (Sub-Parish) level effect in the medium-term onwards.
Birds	Potential direct effects on individual birds, their nests and eggs. Loss of nesting and foraging habitat. Localised	Clearance of hedgerow sections outside of main bird nesting season (i.e. undertaken between	Negative, short to medium-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
	noise disturbance to nesting birds in adjacent / retained habitats. Potential increase in cat predation post-construction, although new gardens likely to provide supplementary food.	September and February), or subject to pre-clearance check by an ecologist. Habitat creation and provision of nest boxes within new buildings. Landscape proposals will provide suitable new habitat for birds once established.	Minor positive (Sub-Parish) level effect in the medium-term onwards.
Badger	Sett damage or destruction, and killing or injury of badgers. Loss of foraging habitat. Entrapment/ injury during construction. Habitat fragmentation, lighting and roads. Vehicle collisions / mortality.	Pre-construction check for new badger setts within and adjacent to the Site. Closure of any badger setts under Natural England licence if deemed likely to be affected by construction activities. Adherence to best practice working methods to mitigate potential direct construction impacts.	Negative long-term effect at Sub-Parish level, not significant.
Bats	No effects on bat roosts predicted. Loss of bat commuting/foraging habitat. Potential disruption to light-averse bat species through construction and post-construction lighting.	All contractors' compounds located a minimum of 10m away from retained trees, hedgerows and woodland. Restrictions on construction lighting between April and October. Habitat creation and provision of bat boxes within new buildings and on trees. Post-construction lighting designed to minimise impacts on bats.	Negative, short-term effect at Sub-Parish level, not significant. Neutral effect in the medium-term onwards (on the basis that a mitigated lighting strategy is delivered).
Other mammals	Loss of habitats and potential for direct effects (killing / injury) to hedgehog during Site clearance. Fragmentation of new habitats from garden fencing.	Clearance of hedgerows sections preceded by a check by an ecologist for sheltering hedgehogs. Habitat creation and creation of hedgehog passes in new garden fences.	Negative, short-term effect at Sub-Parish level, not significant. Neutral effect in the medium-term onwards.

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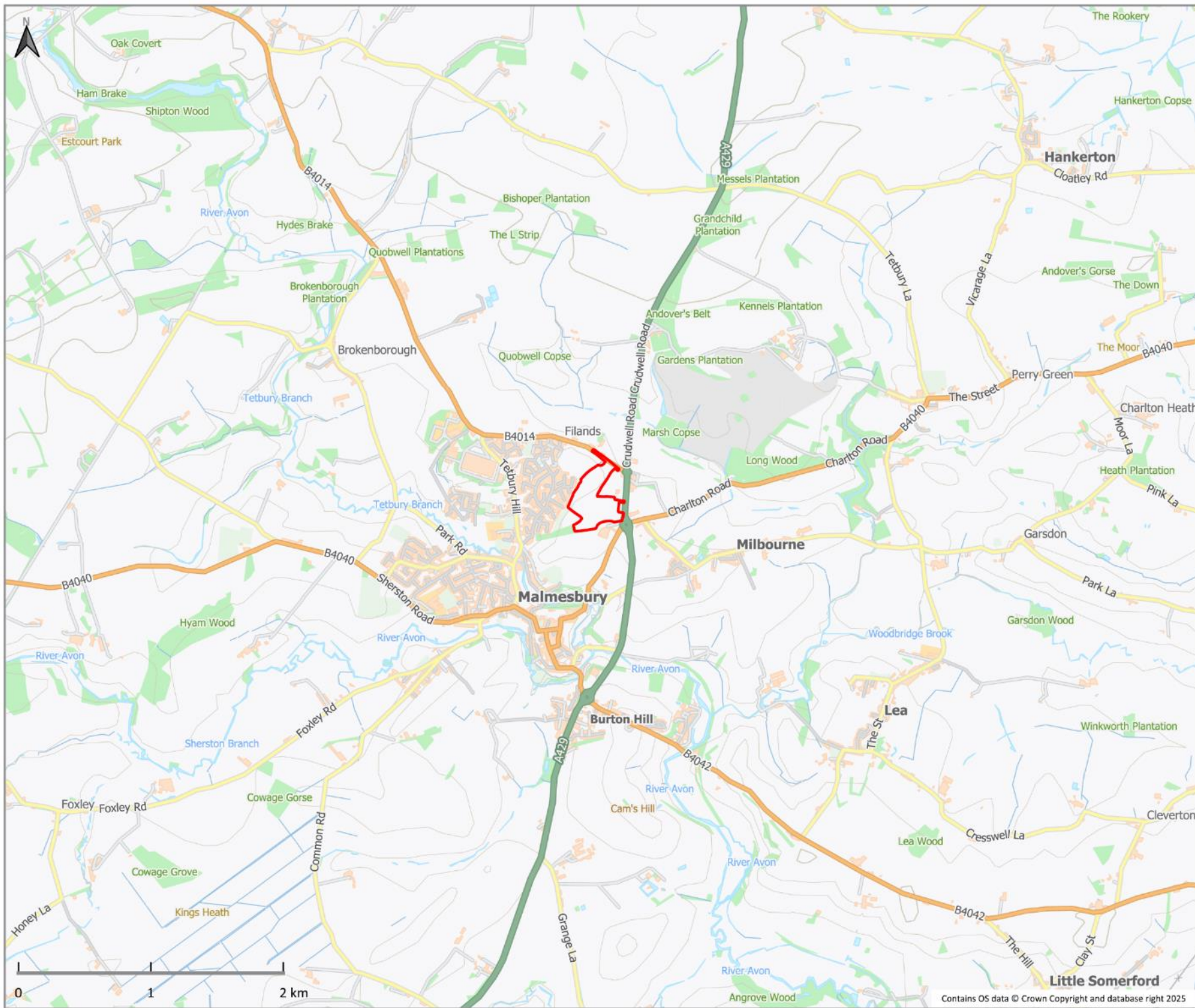
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Figure 1: Site location plan



Key

Site boundary

ead
ecology

www.eadecology.co.uk

Gleeson Land
Land North of Whychurch Farm,
Malmesbury

Site Location Plan

18/02/2025

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Figure 2: Illustrative masterplan



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London T: 01794 367703

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Rev	Description
A	Issued For Planning

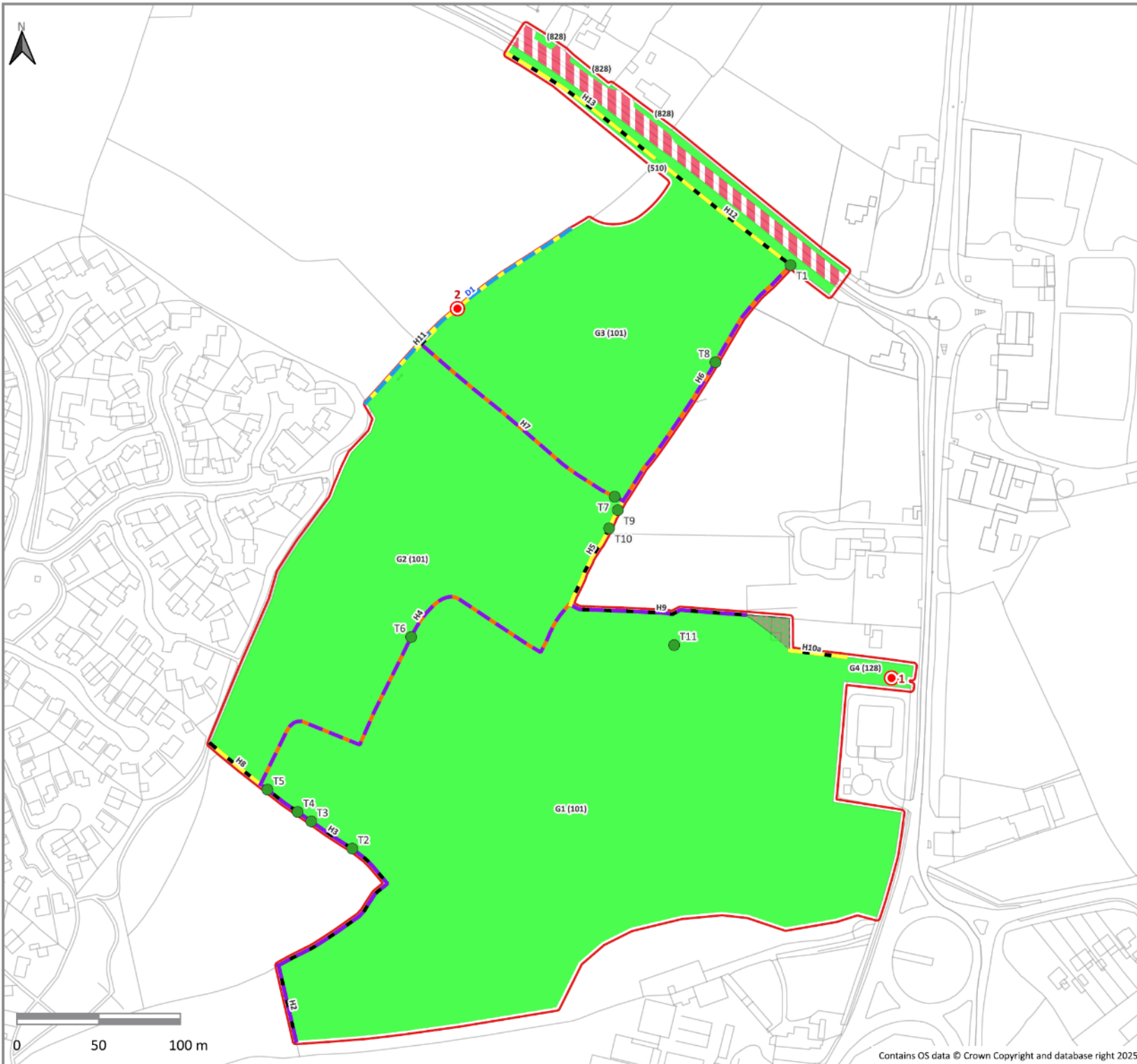
Date	Au	Ch
24.02.25	NJ/TM	NJ

Project	Land north of Whychurch Farm and west of Crudwell Road
Drawing	Illustrative Masterplan

Client	Gleeson Land	Date	31.01.25
Job no.	GLEE240917	Rev.	A
Dwg no.	IMP.02	Scale	1:1250@A2
Author	NJ/TM	Checked	NJ
Status	PLANNING	Office	Portishead
Client ref.	-		



**Figure 3: UKHab Habitat plan, target notes and
photographs**



Key

- Site boundary
- Target Notes
- Native individual tree
- Ditches
- Native hedgerow
- Species-rich native hedgerow
- Species-rich native hedgerow - associated with bank or ditch
- g4 - modified grassland
- w1g - other woodland-broadleaved
- u1b - developed land, sealed surface

UKHab code	Description
31	Secondary woodland
50	Ditch
101	Cattle grazed
128	Tall and tussocky sward

Target Notes	
Number	Description
1	Lower lying area of grassland regularly flooded. Floating sweet-grass and duckweed sp. dominant. 
2	Ditch (approximately 0.5 - 1m wide), damp at time of survey, and likely to hold water for more than four months of the year. Vegetation on banks included frequent to abundant soft rush, common sorrel, common nettle and broad-leaved willowherb. 

Figure 4: Land Use Parameter Plan



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Rev	Description
A	Issued For Planning

Date	Au	Ch
24.02.25	LC	NJ

Project	Land north of Whychurch Farm and west of Crudwell Road
Drawing	Land Use Parameter Plan

Client	Gleeson Land				
Job no.	GLEE240917	Date	11.02.25		
Dwg no.	LUPP.01	Rev.	A		
Author	LC	Checked	NJ	Scale	1:1250@A2
Status	PLANNING	Office	Portsmouth		
Client ref.	-				



Figure 5: Ecological Constraints and Opportunities Plan



Bat and bird habitat (e.g. bat tubes / bricks; swift boxes) to be incorporated into new buildings and also on trees to provide roosting / nesting habitats.

Insect / bee bricks are also proposed to be incorporated into walls within the residential development.

Creation of significant landscape buffers along the southern, western and northeastern site boundaries which will provide functional Ecological Corridors for a range of species.

Creation of SUDs would provide potential suitable breeding / foraging habitat for amphibians and reptiles.

Native hedgerow creation, woodland, wildflower meadow and wetland habitat creation around the SUDs pond would partially offset habitat loss, and provide habitat for a range of notable species.

One outlier sett located on boundary of Site. A 20m exclusion zone would be set out around this sett prior to construction to avoid any accidental damage. Should the retention of this sett not be feasible, a Natural England Badger Development Licence would be obtained for its closure.

Prior to commencement of construction, update survey to be carried out to reconfirm the site baseline in respect of invasive plant species. Production of an Invasive Species Method Statement if required.

Reptile mitigation strategy to include habitat manipulation, to be undertaken prior to start of construction.

Sensitive lighting strategy has been designed to ensure that light levels do not exceed 0.5lux within the proposed 'dark corridors'.

Site clearance (including hedgerow removal) undertaken outside of bird-nesting season or preceded by a search of suitable habitats for nesting birds.

Loss of hedgerow to facilitate site access.

Retained trees and hedges protected during construction in accordance with BS 5837:2012 Trees in relation to design, demolition and construction.

All trees with bat roost suitability retained and protected.

Three reptile hibernacula created in suitable public open space area.

General construction management measures to minimise impacts on badgers and hedgehogs to be implemented and adhered to during construction.

Hedgehog passes to be provided in garden fences.

Key

- Site boundary
- Badger outlier sett - active
- Ecological Corridors
- New species-rich native hedgerow
- Native hedgerow retained
- Woodland planting open space (10% woodland planting, 30% amenity grassland, 60% wildflower grassland)
- Ownership Line
- Site Access
- Developable Area
- Informal open space (including amenity green space, natural and semi-natural green space, existing tree planting, allotments, drainage and attenuation, tree and structure planting, ecological enhancements, play spaces and natural play, to be resolved in Reserved Matters application).
- Copse Planting
- Retained Vegetation

0 100 200 m

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Gleeson Land

Land North of Whychurch Farm, Malmesbury

Ecological Constraints and Opportunities Plan

25/02/2025

Created by: ML

Scale at A3 1:2,500

Appendix 1: Wildlife legislation, species legislation and conservation status

Wildlife Legislation

Environment Act 2021

The Environment Act 2021 includes various provisions for improving the natural environment, including:

- a) The requirement that planning permission in England will be granted subject to a pre-works commencement condition that requires approval of a Biodiversity Net Gain (BNG) plan with a minimum 10% gain;
- b) The requirement for preparation and publication of Local Nature Recovery Strategies (LNRSs), which will include a statement of biodiversity priorities and a local habitat map that covers the whole strategy area;
- c) The requirement for Natural England to produce Species Conservation Strategies (SCSs) and Protected Site Strategies (PSSs);
- d) Extension of the general biodiversity duty placed on public authorities by Section 40 of the NERC Act from being 'a duty to conserve biodiversity' to being 'a duty to enhance biodiversity' and introduction of a requirement that, in so doing, they must have particular regard to any relevant LNRS and any relevant SCSs and PSSs.

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
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 (*Muscardinus 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*

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

- 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:

- e) 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;*
- f) 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;*
- g) 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*
- h) 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

Appendix 4 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.

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.

Appendix 4: Botanical species list

Common name	Scientific name
Woody species	
Ash	<i>Fraxinus excelsior</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i>
Dog rose	<i>Rosa canina</i>
Dogwood	<i>Cornus sanguinea</i>
Elder	<i>Sambucus nigra</i>
Elm species	<i>Ulmus sp.</i>
Field maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellana</i>
Pedunculate oak	<i>Quercus robur</i>
Sycamore	<i>Acer pseudoplatanus</i>
Herbs	
Broad-leaved dock	<i>Rumex obtusifolius</i>
Broad-leaved willowherb	<i>Epilobium montanum</i>
Bulbous buttercup	<i>Ranunculus bulbosus</i>
Common mouse-ear	<i>Cerastium fontanum</i>
Common sorrel	<i>Rumex acetosa</i>
Common nettle	<i>Urtica dioica</i>
Creeping buttercup	<i>Ranunculus repens</i>
Creeping thistle	<i>Cirsium arvense</i>
Curled dock	<i>Rumex crispus</i>
Dandelion	<i>Taraxacum officinalis</i>
Daisy	<i>Bellis perennis</i>
Duckweeds sp.	<i>Lemnoideae sp.</i>
Herb-Robert	<i>Geranium robertianum</i>
Ivy	<i>Hedera helix</i>
Lords-and-Ladies	<i>Arum maculatum</i>
Red clover	<i>Trifolium pratense</i>
White clover	<i>Trifolium repens</i>
Wood avens	<i>Geum urbanum</i>
Grasses, sedges and rushes	
Cocks's-foot	<i>Dactylis glomeratus</i>
Hard rush	<i>Juncus inflexus</i>
Floating sweet grass	<i>Glyceria fluitans</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Perennial ryegrass	<i>Lolium perenne</i>
Red fescue	<i>Festuca rubra</i>
Rough meadow grass	<i>Poa trivialis</i>
Smooth meadow grass	<i>Poa pratensis</i>
Soft brome	<i>Bromus hordeaceus</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Yorkshire-fog	<i>Holcus lanata</i>

Appendix 5: Hedgerow survey result

Hedgerow survey

1 Methodology

The hedgerow survey was undertaken on 31 July 2024 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'.

2 Limitations

There were no limitations to the surveys.

3 Results

Table A5.1 and Figure A5.1 below details the results of the hedgerow survey. Two of the ten hedgerow lengths surveyed were assessed as being 'ecologically important'.

4 References

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

Table A5.1 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/ditch over half length of hedgerow	Number of 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
H2	57		N	Y	N	N	5	N	<i>Sambucus nigra</i> , <i>Crataegus monogyna</i> , <i>Prunus spinosa</i> , <i>Ulmus</i> sp., <i>Cornus sanguineus</i> , <i>Rosa</i> sp.	6	<i>Arum maculatum</i>	1	N
H3	184		N	Y	N	N	7	Y	<i>Crataegus monogyna</i> , <i>Ulmus</i> sp., <i>Rosa</i> sp., <i>Prunus spinosa</i> , <i>Sambucus nigra</i> , <i>Acer campestre</i>	6	<i>Arum maculatum</i>	1	Y
H4	296		N	Y	N	Y	4	Y	<i>Ulmus</i> sp., <i>Crataegus monogyna</i> , <i>Fraxinus excelsior</i> , <i>Rosa</i> sp., <i>Prunus spinosa</i> , <i>Sambucus nigra</i> , <i>Acer campestre</i>	7	<i>Arum maculatum</i>	1	Y
H5	72		N	Y	N	N	4	Y	<i>Crataegus monogyna</i> , <i>Ulmus</i> sp., <i>Prunus spinosa</i> , <i>Rosa</i> sp.	4	<i>Arum maculatum</i>	1	N
H6	165		N	Y	N	N	4	Y	<i>Crataegus monogyna</i> , <i>Ulmus</i> sp., <i>Acer campestre</i> , <i>Corylus avellana</i> , <i>Prunus spinosa</i> , <i>Cornus sanguineus</i>	6	<i>Geum urbanum</i> , <i>Geranium robertianum</i> , <i>Arum maculatum</i>	3	Y
H7	157		N	Y	N	N	5	Y	<i>Crataegus monogyna</i> , <i>Ulmus</i> sp., <i>Prunus spinosa</i> , <i>Rosa</i> sp., <i>Sambucus nigra</i> , <i>Cornus sanguineus</i> , <i>Acer campestre</i>	7	<i>Arum maculatum</i>	1	Y
H8	39		N	Y	N	N	3	N	<i>Sambucus nigra</i> , <i>Prunus spinosa</i> , <i>Ulmus</i> sp., <i>Crataegus monogyna</i>	4		0	N
H9	108		N	Y	N	N	2	N	<i>Ulmus</i> sp., <i>Prunus spinosa</i> , <i>Crataegus monogyna</i> , <i>Rosa</i> sp., <i>Sambucus nigra</i> , <i>Ligustrum vulgare</i> , <i>Acer campestre</i>	7	<i>Geranium robertianum</i> , <i>Geum urbanum</i>	2	Y

Table A5.1 Hedgerow survey results

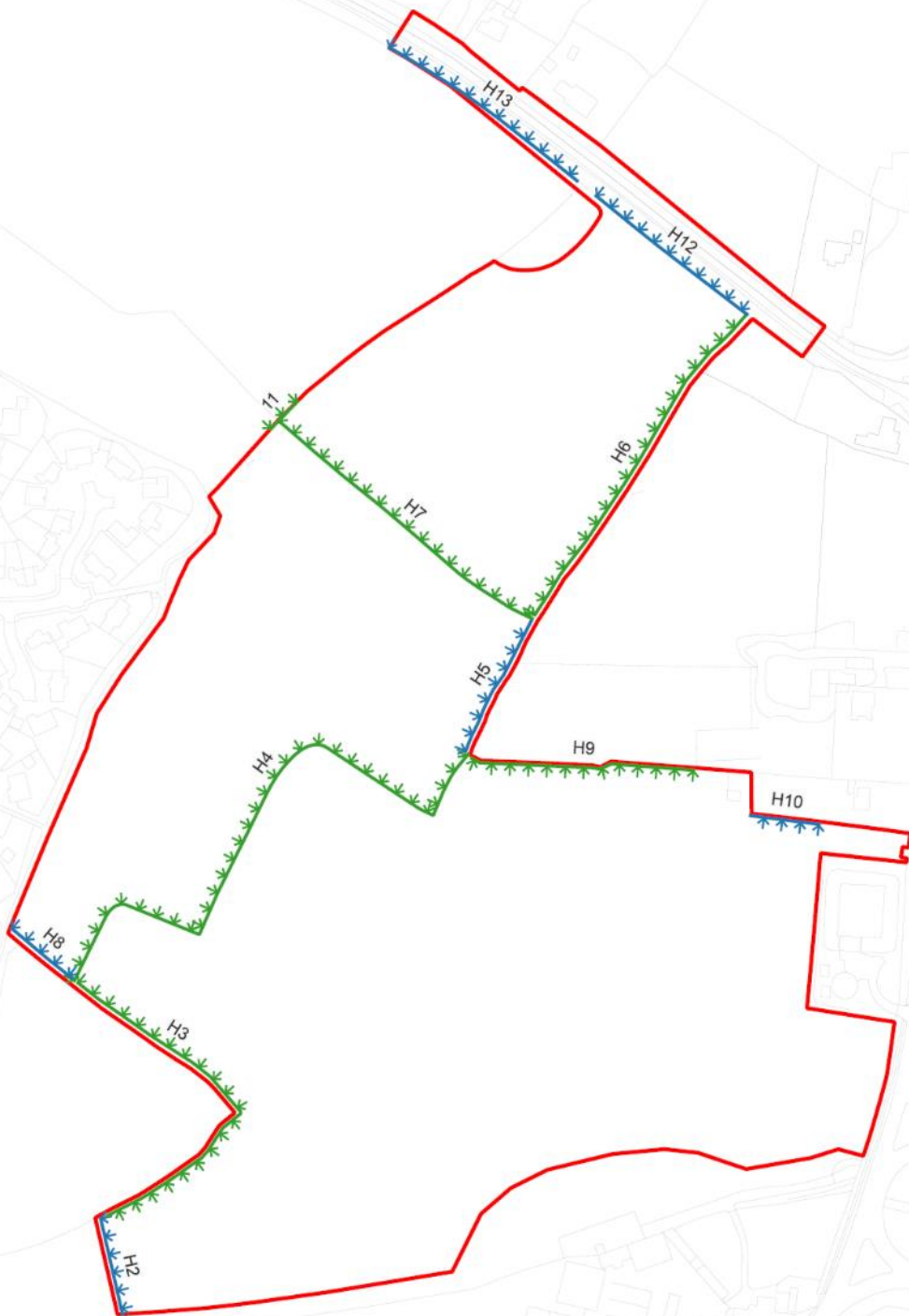
Hedgerow number* (refer to Hedgerow survey plan)	Length (m approx.)	Presence of protected/notable species	Parallel to right of way	Gaps <10% hedgerow length	Parallel to hedgerow within 15m	Wall/bank/ditch over half length of hedgerow	Number of connections	At least one standard tree per 50m length	Woody species	Average number of woody species in 30m length	Woodland indicator species	Number of woodland indicator species	Important
H10	36		N	Y	N	N	0	Y	<i>Crataegus monogyna</i> , <i>Prunus spinosa</i> , <i>Corylus avellana</i> , <i>Fagus sylvatica</i>	4		0	N
H11	30	N	Y	Y	N	Y	2	N	<i>Crataegus monogyna</i> , <i>Prunus spinosa</i> , <i>Corylus avellana</i> , <i>Rosa sp.</i> , <i>Ulmus sp.</i> ,	5	<i>Arum maculatum</i>	1	Y
H12	95	N	N	Y	N	N	3	N	<i>Crataegus monogyna</i>	1	<i>Arum maculatum</i>	1	N
H13	109	N	N	Y	N	N	3	N	<i>Crataegus monogyna</i>	1	<i>Arum maculatum</i>	1	N

*A reduction in the Site boundary meant 'H1' was no longer relevant to the application and it has consequently been excluded from the assessment.

Figure A5.1: Hedgerow survey plan



0 50 100 m



Key

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

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Gleeson Land
Land North of Whychurch Farm,
Malmesbury
Hedgerow Survey Plan

20/02/2025

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Appendix 6: Great crested newt survey results

Great crested newt survey

1 Methodology

1.1 Identification of ponds

A desktop study was undertaken using Ordnance Survey mapping and aerial photography to locate ponds and other waterbodies potentially suitable for great crested newt (GCN) within 250m of the Site boundary at the time of survey. Three waterbodies (Ponds 1-3) were provisionally identified; refer to Figure A6.1. During a walkover survey on 19 June 2020, Ponds 1 and 3 were dry and no further survey was subsequently possible.

1.2 Habitat Suitability Index

A Habitat Suitability Index (HSI) assessment was undertaken of Pond 2 on 19 June 2020. HSI is a numerical index, between zero and one; zero indicates unsuitable habitat, one represents optimal habitat. The HSI for great crested newt (Oldham *et al*, 2000) incorporates ten suitability indices, all of which are factors thought to affect the species. The suitability of the ponds to support GCN was then categorised using the following scale (ARG UK 2010):

Table A6.1: Categorisation of HSI scores

HSI score	Pond suitability
<0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

1.3 Presence/absence survey (eDNA)

Environmental DNA (eDNA) samples were collected from Pond 2 on 19 June 2020 by a Natural England GCN-licensed ecologist in strict adherence to the methodology stated in the DEFRA Technical Report (WC1067; Biggs *et al*, 2014). Samples were immediately to an independent laboratory (NatureMetrics Ltd, Surrey) for analysis following the Natural England approved methodology.

2 Limitations

Due to seasonal constraints, it was not possible to update the great crested newt survey in advance of the planning application submission. An update great crested newt survey of all ponds within 250m of the Site, to include HSI and eDNA sampling where appropriate, will be undertaken in April 2025, and the results submitted as an Addendum to the EclA in June 2025.

3 Results

3.1 Habitat Suitability Index (HSI)

Pond 2 was considered to have 'Average' suitability for GCN. Refer to Appendix 6.1 for the detailed HSI assessment for Pond 2.

Table A6.2: Pond 2 HSI score result

Habitat Suitability Index				SI value
SI1.	Map location	A/B/C	A	1.00
SI2.	Surface area	rectangle/ellipse/irregular	rectangle	
	length (m)		80	
	width (m)		1	
	OR estimate (m ²) if irregular			
	area (m ²) =		80	0.16
SI3.	Dessication rate	never/rarely/sometimes/frequently	rarely	1.00
SI4.	Water quality	good/moderate/poor/bad	poor	0.33
SI5.	Shade	% of margin shaded 1m from bank	75	0.70
SI6.	Waterfowl	absent/major/minor	absent	1.00
SI7.	Fish population	absent/possible/minor/major	absent	1.00
SI8.	Pond density	number of ponds within 1km	5	1.00
SI9.	Terrestrial habitat	good/moderate/poor/isolated	moderate	0.67
SI10.	Macrophyte cover	%	25	0.56
			HSI =	0.65
			provisional HSI =	0.62
Use provisional HSI value if above 0.75				
			Date undertaken	19.06.2020

3.2 Presence/absence survey (eDNA)

GCN eDNA was not detected in samples from Pond 2, and a negative result was returned. All samples passed inhibition and degradation controls. Refer to Figure A6.2 for the eDNA laboratory report.

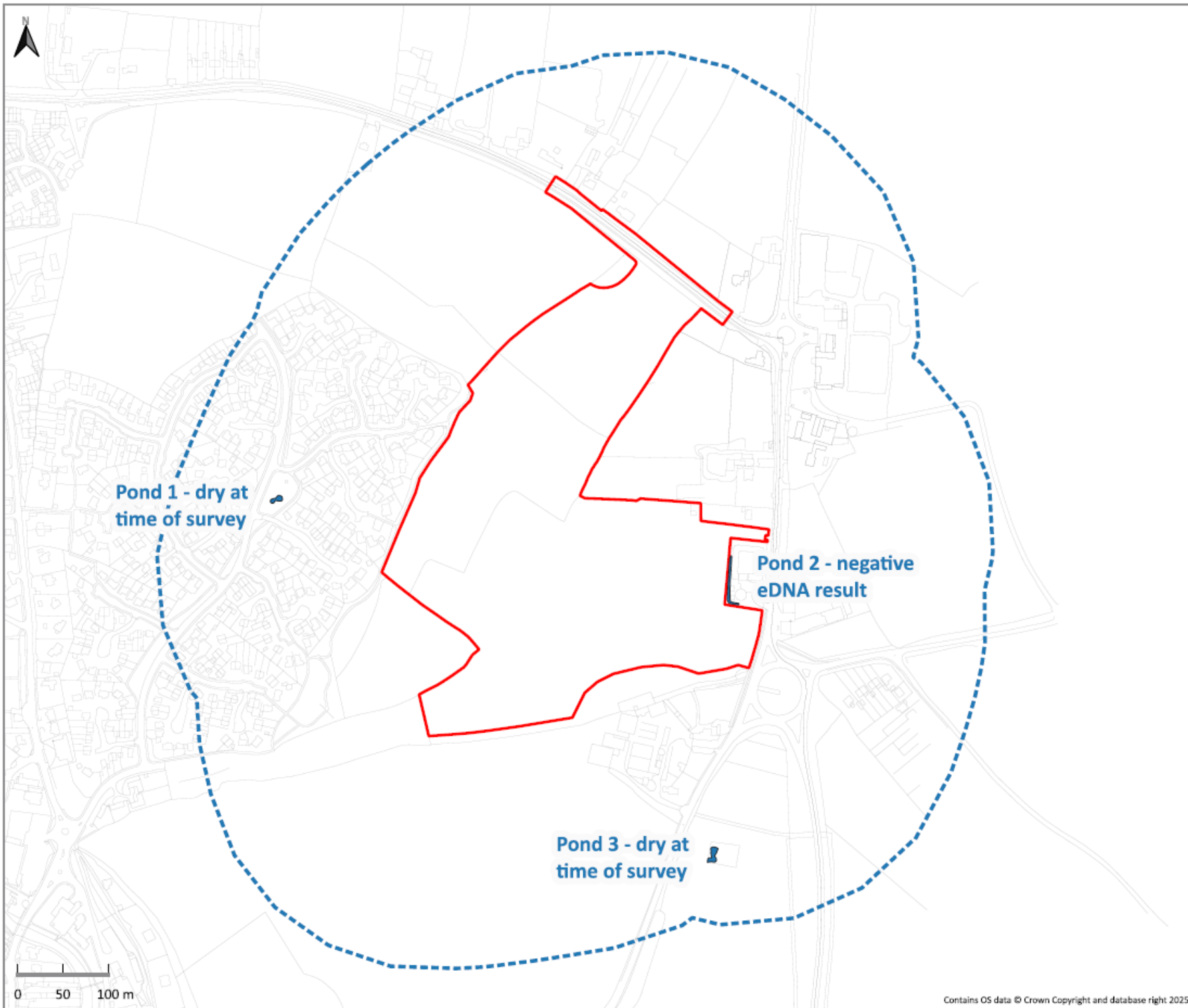
4 References

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*. Defra Project WC1067. Freshwater Habitats Trust: Oxford.

English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

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

Figure A6.1: Great Crested Newt Survey Plan



Key

-  Pond
-  250m buffer
-  Site boundary

Figure A6.2: Great Crested Newt eDNA Results

(Pond 2 was previously known as Pond 4)

Report: 101447-1

Order number: 101447

Great Crested Newt eDNA Results

Company: EAD Ecology
Project code | Task code: P1084 Malmesbury Phase 3 Gleeson
Date of Report: 7 July 2020
Number of samples: 1

Thank you for sending your sample(s) for analysis by NatureMetrics. Your sample(s) have been processed in accordance with the protocol set out in Appendix 5 of Biggs et al. (2014).

DNA was precipitated via centrifugation at 14,000 x g and then extracted using Qiagen Blood and Tissue extraction kits.

qPCR amplification was carried out in 12 replicates per sample, using the primers and probe described by Biggs et al. (2014), in the presence of both positive and negative controls.

Results indicate GCN absence in 'Pond 4 '. All controls performed as expected and so the results are conclusive.

Results are based on the samples as supplied by the client to the laboratory. Incorrect sampling methodology may affect the results. Note that a negative result does not preclude the presence of Great Crested Newts at a level below the limits of detection.

Sample	Pond ID	Arrived	Inhibition	Degradation	Score	GCN status
1519	'Pond 4 '	24-Jun	No	No	0	Negative

End of report

Report issued by: Dr. Narin Kirikyali

Contact: gcn@naturemetrics.co.uk | 01491 829042



Appendix 7: Reptile survey results

Reptile survey results

1 Methodology

A reptile survey was undertaken according to standard methodology (Froglife 1999). The survey of the Site was split into two areas (the two northern fields and the southern field). A total of 75 artificial refuges (0.5m² roofing felt tiles) were placed in suitable habitat within the northern fields on 15 June 2020 and checked on seven occasions in appropriate weather conditions between late June and late July 2020. A total of 75 artificial refuges were then placed in suitable habitat within the southern field on 10 August 2020 and checked on seven occasions in appropriate weather conditions between mid-August and late September 2020.

2 Limitations

The Site was split into two areas for survey due to the presence of livestock that could have potentially damaged or interfered with the artificial refuges. Livestock was alternated between the two areas depending on when each area was being surveyed for reptiles at the time. The survey was completed according to standard methodology and no refuges were damaged, therefore this is not considered to be a significant limitation.

Due to seasonal constraints, it was not possible to update the reptile survey in advance of the planning application submission. An update reptile survey of the Site will be undertaken in April 2025, and the results submitted as an Addendum to the EclA in June 2025. As the 2024 update habitat survey of the Site did not identify any significant changes since 2020, this is not considered to be a significant limitation.

3 Results

The survey results for the two northern fields are provided in Table A7.1, and the results for the southern field in Table A7.2 below. Suitable habitat occurred predominantly around field margins, and a 'Low' population of slow-worm and grass snakes was recorded across the Site. Refer to Figure A7.1 for locations of artificial refuges.

Table A7.1: Reptile survey results – northern fields

Visit no.	Date	Start Time	Temperature ('C)	Cloud cover	Wind force	Results
1	22.06.20	11:30	17	2/8	2	1 slow-worm (1 female)
2	29.06.20	11:30	15	4/8	3-4	4 slow-worms (1 male and 3 females)
3	03.07.20	09:30	15	6/8	2-3	4 slow-worms (1 male, 2 females and 1 juvenile)
4	13.07.20	11:00	18	7/8	1-2	3 slow-worms (1 male and 2 females) 1 grass snake (1 adult)
5	20.07.20	18:30	18	2/8	1	No reptiles
6	27.07.20	15:30	17	4/8	1	1 slow-worm (1 juvenile)
7	28.07.20	12:30	18	6/8	1	3 slow-worms (3 females)

Table A7.2: Reptile survey results – Southern field

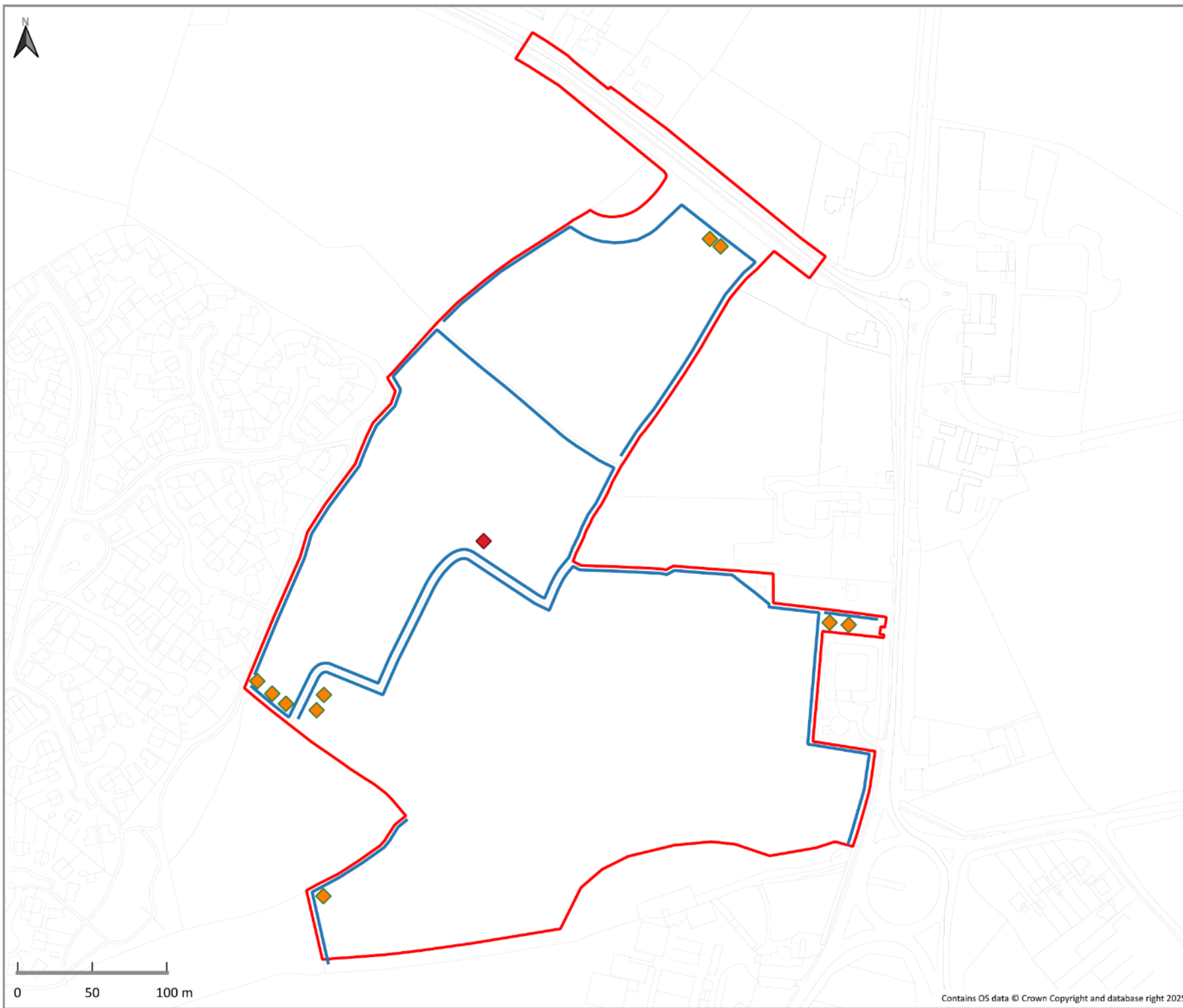
Visit no.	Date	Start Time	Temperature ('C)	Cloud cover	Wind force	Results
1	17.08.20	18:00	18	4/8	1	No reptiles
2	27.08.20	12:00	15	8/8	1	2 slow-worms (2 females)
3	01.09.20	17:00	18	4/8	0	1 slow-worm (1 female)
4	07.09.20	15:00	18	2/8	0	No reptiles
5	15.09.20	09:30	19	2/8	0	1 slow-worm (1 female)
6	23.09.20	09:45	16	7/8	1	No reptiles
7	28.09.20	12:00	15	6/8	1	1 slow-worm (1 juvenile)

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 A7.1: Reptile Survey Plan



Key

- Reptile felt location
- Grass snake location
- Slow worm location
- Site boundary

Appendix 8: Breeding bird survey results

Breeding bird survey

1 Methodology

A breeding bird survey was undertaken based on an adapted Common Bird Census (CBC) methodology (Gilbert *et al* 1998). Three survey visits were carried out between May and July 2020 by an experienced ornithologist, following a transect route that allowed full coverage of the Site. Visits were made during the morning in suitable weather conditions (avoiding rain and strong winds, although showery days were acceptable). The locations of all birds seen and/or heard during each visit were mapped and any breeding-related behaviour was recorded (such as 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 Site.

2 Limitations

Although it is recommended that breeding bird surveys are undertaken across April, May and June, national Covid-19 lockdown restrictions did not permit a survey to be undertaken during April 2020, and poor weather in late June 2020 prevented a second survey from being carried out during this month. The final survey was carried out in early July 2020 and the information collected is considered sufficient to allow for a robust assessment of breeding bird activity within the Site.

Due to seasonal constraints, it was not possible to update the breeding bird survey in advance of the planning application submission. An update breeding bird survey of the Site will be undertaken between April and June 2025, and the results submitted as an Addendum to the EclA in June 2025. As the 2024 update habitat survey of the Site did not identify any significant changes since 2020, this is not considered to be a significant limitation

3 Results

Survey dates, times and weather conditions are presented in Table 8.1.

Table A8.1: Survey conditions

Visit number	Date	Time	Weather
1	21 May 2020	08:00 – 10:00	Cloud 0/8, wind F2-3, temperature 14°C
2	8 June 2020	08:00 – 10:00	Cloud 1/8, wind F2, temperature 11°C
3	3 July 2020	08:30 – 10:30	Cloud 8/8, wind F2-3, temperature 14°C

Table A8.2 provides a summary of the survey results and categorises each species' breeding status within the Site 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).

A total of 23 species were recorded during the course of the survey, of which 16 species were confirmed, probably or possibly breeding within the Site. These included:

- Linnet and house sparrow, which possibly bred. These are Priority Species and Red-listed Birds of Conservation Concern (Eaton *et al* 2015).

- Dunnock, which was confirmed breeding. This is an Amber-listed Bird of Conservation Concern and Priority Species.
- Stock dove, which possibly bred. This is an Amber-listed Bird of Conservation Concern.
- Kestrel, starling and swift, which are all Red or Amber Birds of Conservation Concern and / or Priority Species; however, none of these species were considered to be breeding within the Site.

4 References

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man*. British Birds **108**, 708–746.

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

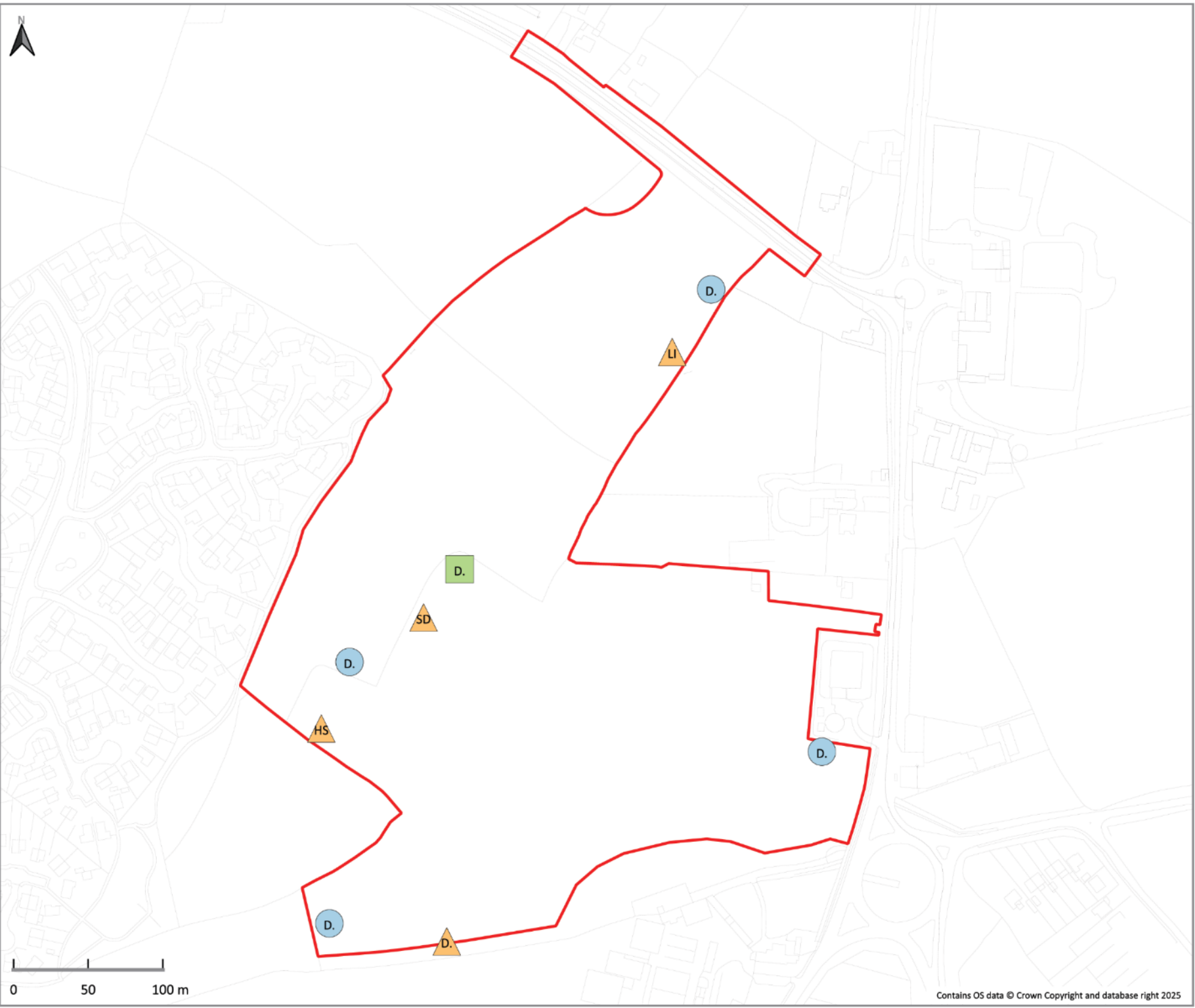
Table A8.2: Breeding bird survey results

Common name	BTO species code	Legal & Conservation Status (standard protection and Green/unlisted (Eaton <i>et al</i> 2015) unless stated)	Date & no. recorded			Breeding status				Notes
			21 May 2020	8 June 2020	3 July 2020	Confirmed	Probable	Possible	Non-breeding	
Blackbird	B.		7	10	9	✓				2-4 pairs. Juveniles recorded.
Blackcap	BC		2	1	1		✓			1 pair. Male holding territory in suitable breeding habitat in south of the Site.
Blue tit	BT		3	4	2	✓				1-2 pairs. Juveniles recorded.
Carrion crow	C.		3	4	5	✓				1-2 pairs. Active nest and juveniles recorded. In south of the Site.
Chiffchaff	CC		1	1	1		✓			1 pair. Male holding territory in suitable breeding habitat in south of the Site.
Dunnock	D.	Priority, Amber	4	7	3	✓				5-6 pairs. Juvenile recorded.
Goldfinch	GO		4	1	4			✓		1-2 pairs. Adults recorded in suitable breeding habitat.
Great spotted woodpecker	GS		0	2	1			✓		1 pair. Adults recorded in suitable breeding habitat.
Greenfinch	GR		0	0	1				✓	One adult seen during July visit only.
House sparrow	HS	Priority, Red	9	8	1			✓		Most likely bred in houses to the west of the Site, but possibly nested in hedgerows.
Jackdaw	JD		13	0	0				✓	Recorded foraging only.
Kestrel	K.	Amber	0	1	1				✓	Recorded foraging only.
Linnet	LI	Priority, Red	1	1	0			✓		1 pair. Singing male recorded in suitable breeding habitat in north of Site.
Magpie	MG		1	2	4			✓		1-2 pairs. Adults recorded in suitable breeding habitat.
Robin	R.		5	8	3	✓				2-4 pairs. Juveniles recorded.
Rook	RO		0	4	0				✓	Recorded flying over Site only.
Starling	SG	Priority, Red	3	0	1				✓	Recorded foraging only.
Stock dove	SD	Amber	1	2	0			✓		1 pair. Adults recorded in suitable breeding habitat.
Swallow	SL		6	3	0				✓	Recorded foraging only.
Swift	SI	Amber	0	5	0				✓	Recorded foraging only.
Whitethroat	WH		2	1	0		✓			1 pair. Male recorded holding territory in south.

Table A8.2: Breeding bird survey results

Common name	BTO species code	Legal & Conservation Status (standard protection and Green/unlisted (Eaton <i>et al</i> 2015) unless stated)	Date & no. recorded			Breeding status				Notes
			21 May 2020	8 June 2020	3 July 2020	Confirmed	Probable	Possible	Non-breeding	
Woodpigeon	WP		10	14	18		✓			3-8 pairs. Males recorded singing in suitable breeding habitat.
Wren	WR		3	3	3		✓			3 pairs. Males recorded holding territory in south.

Figure A8.1: Breeding Bird Survey Plan



Key

- D. Duncock
- HS House Sparrow
- LI Linnet
- SD Stock Dove
- Confirmed breeding
- Probable breeding
- Possible breeding
- Site boundary

Appendix 9: Hazel dormouse survey results

Dormouse survey results

1 Methodology

2020

The survey was undertaken following standard methodology (Bright et al 2006) and under a Natural England dormouse survey licence. 83 dormouse nesting tubes were installed within suitable habitat within the survey boundary on 29 May 2020 (60 tubes) and 19 June 2020 (23 tubes); refer to Figure A10.1 for nest tube distribution. Dormouse surveys were completed on 29 June, 28 July, 27 August, 28 September, 29 October and 26 November 2020, giving an index score of 33. The suggested minimum score for adequate survey effort is 20 (Chanin & Woods 2003).

2024

The dormouse survey was undertaken following standard methodology (Bright et al. 2006) and under a Natural England dormouse survey licence. 80 dormouse nesting tubes were installed within suitable habitat within the survey boundary on 25 July 2024; refer to Figure A10.1 for nest tube distribution. Dormouse surveys were completed on 20 August, 10 September, 08 October and 12 November 2020, giving an index score of 28.8. The suggested minimum score for adequate survey effort is 20 (Chanin & Woods 2003).

2 Limitations

2020

Some of the nest tubes were damaged due to hedge cutting in September 2020. These tubes were replaced on 28 September 2020 and were left in situ until 26 November 2020. The index score for adequate survey effort was exceeded, therefore this is not considered to be a significant limitation.

2024

There were no limitations to the 2024 update dormouse survey.

5 Results

2020

No evidence of hazel dormouse was recorded during the course of the 2020 survey.

2024

No evidence of hazel dormouse was recorded during the course of the 2024 survey.

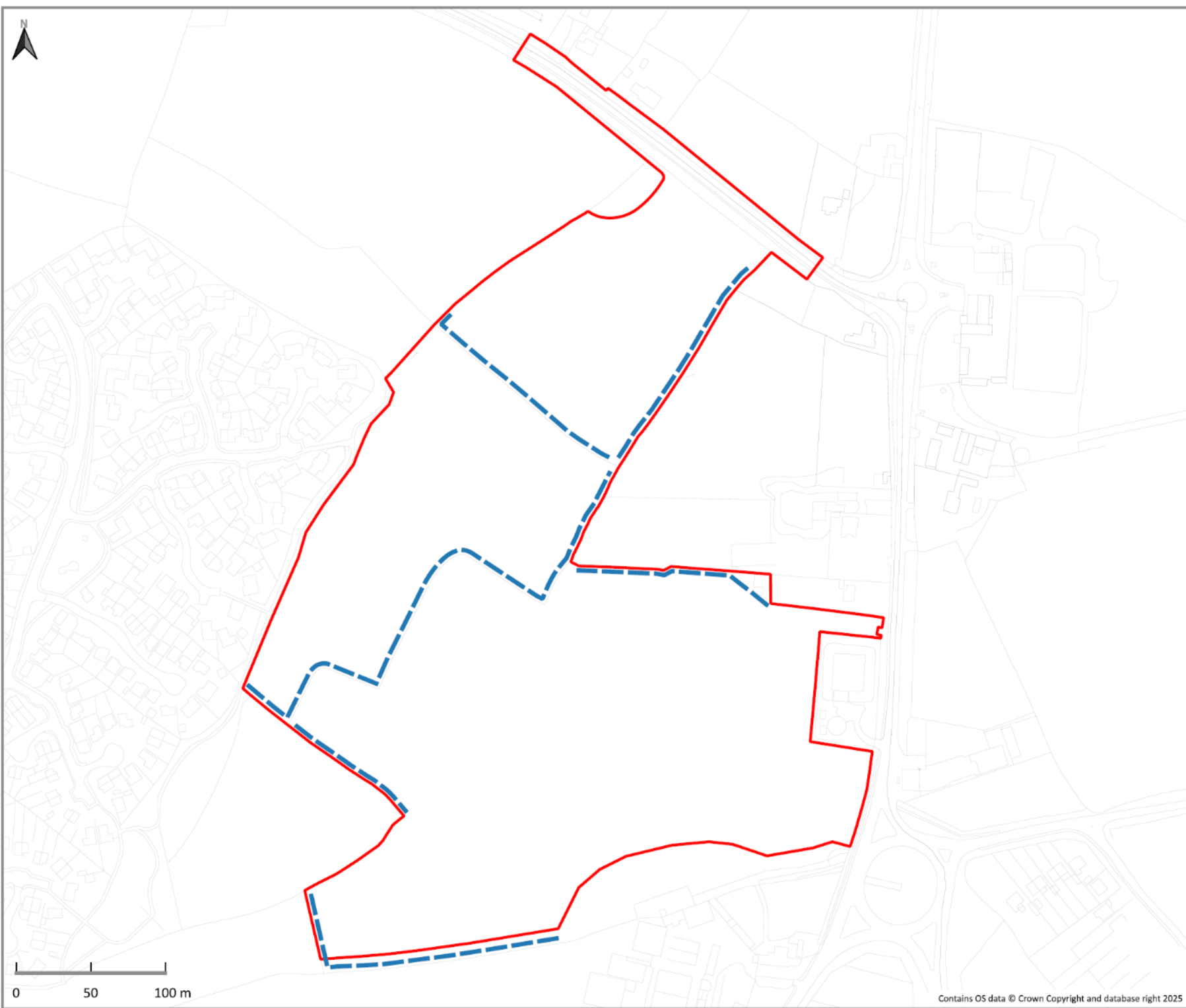
6 References

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 A9.1: Hazel dormouse survey plan



Key

- Dormouse tube location
- Site boundary

Appendix 10: Badger survey results

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) within and adjacent to the Site (up to 30m from the boundary where accessible) was carried out on 1 September 2020. Update surveys were carried out on 9 July 2021 and 25 July 2024.

2 Limitations

There were no limitations to the badger survey.

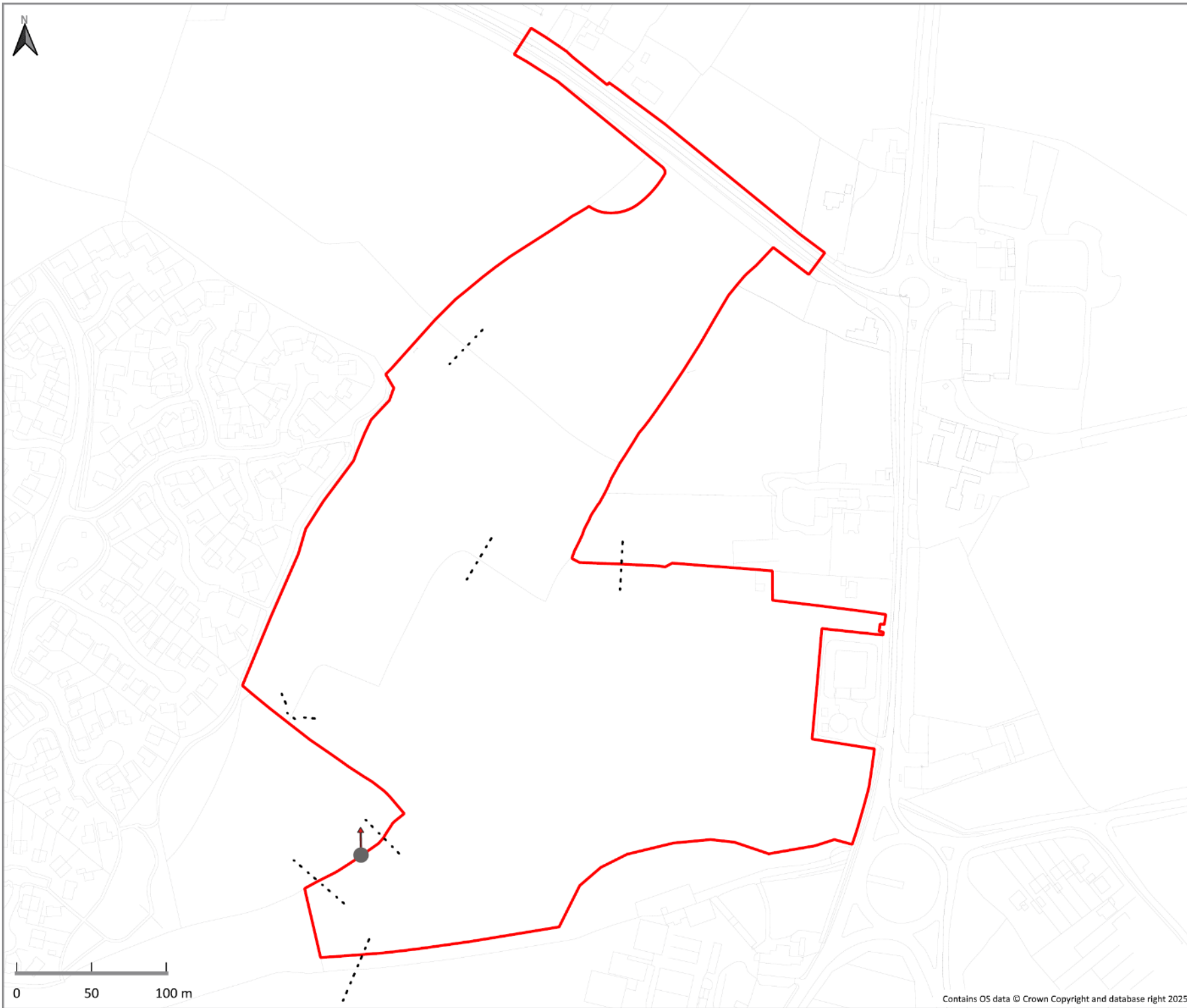
3 Results

One partially-used badger hole (outlier sett) was recorded on the south-western boundary of the Site; refer to Figure A10.1. Other evidence of badger activity was recorded, including paths. Habitats within the Site provided suitable foraging habitat for badger. No significant changes were noted during the update survey.

4 References

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

Figure A10.1: Badger survey plan



Key

-  Tunnel direction
-  Outlier sett - active
-  Well used mammal track
-  Site boundary

Appendix 11: Bat activity survey results

Bat activity survey

1 Background

A series of bat activity surveys were undertaken in 2020 with reference to best practice guidance available at the time of the survey (BCT 2016). The 2020 survey data is not directly comparable with the update surveys undertaken in 2024 (which utilised different survey equipment and methodologies). The pre-existing survey data was used to provisionally assess the value of the Site for bats and inform the update (2024) survey methodology. As stated in Collins (2023); *'the value of older data should be considered when updating surveys as it may not be necessary to start from scratch'*. The update habitat survey undertaken on 31 July 2024 identified no significant changes to the habitats within the Site that may have impacted upon its value to bats, and it was therefore considered that the 2016 survey effort, in combination with the update 2024 surveys, remained relevant to inform the impact assessment and design of the appropriate avoidance, mitigation and enhancement strategy for the general bat assemblage.

2 Methodology

Transect survey (2020)

Monthly transect surveys were undertaken between June and October 2020. A predetermined transect route was walked at a constant pace by surveyors, recording observations of bats such as flight direction, flight height, number of bats and behaviour (e.g. foraging or commuting). Surveys began at sunset and continued for at least two hours. Surveyors carried Anabat Express (Titley Electronics) and Batbox Duet bat detectors.

Night-time Bat Walkover (2024)

Following current BCT guidelines (Collins [ed.] 2023), seasonal night-time bat walkover surveys were undertaken on 17 August 2024 (summer) and 17 October 2024 (autumn). Ecologists were stationed at predetermined locations, primarily at potential flight lines close to potential roost sources such as groups of buildings or trees. The surveys commenced at sunset and the ecologists remained in position for 30-60 minutes to count, observe behaviour and make acoustic recordings of bat activity with detectors (Anabat Scout). The ecologists then walked a predetermined route taking acoustic recordings and noting a time-stamped narrative of their observations. All echolocation calls were recorded and subsequently analysed using 'Anabat Insight' (Titley Electronics) to species or genus.

Static detector survey (2020 and 2024)

Stratified sampling of the Site using static bat detectors was undertaken from May to October 2020 and July to October 2024. Static detectors (Anabat Express in 2020 and Anabat Express FS in 2024) were deployed on pre-determined habitat features considered likely to be of value for bats; refer to Table A11.1 and Figure A11.1 for locations. Detectors were programmed to record from 30 minutes prior to sunset, to 30 minutes post-sunrise.

Four static bat detectors were deployed for a minimum of five nights per month between May and October 2020. Six static bat detectors were deployed for a minimum of five nights per month between July and October 2024. The increased number of detectors reflected the higher weighting given to use of static detectors in the updated survey guidance.

Table A11.1 Static Detector Survey details; refer to Figure A11.1 for locations.

Static Location	Static Detector location	2020 Survey period	2024 Survey period	Total number of nights	
				2020	2024
1	Central hedgerow sub-dividing the southern and central field parcels	23/05 – 27/05 24/06 – 28/06	25/07 – 29/07 20/08 – 24/08	31	15

Table A11.1 Static Detector Survey details; refer to Figure A11.1 for locations.

Static Location	Static Detector location	2020 Survey period	2024 Survey period	Total number of nights	
				2020	2024
	with the microphone facing south-east (modified grassland).	23/07 – 27/07 19/08 – 23/08 14/09 – 18/09 14/10 – 19/10	09/10 – 13/10		
2	Northern portion of the Site – located on a fence post adjacent to a species-rich hedgerow dividing the northern and central field parcels with the microphone facing north (modified grassland).	23/05 – 27/05 24/06 – 28/06 23/07 – 27/07 19/08 – 23/08 14/09 – 18/09 14/10 – 19/10	25/07 – 29/07 20/08 – 24/08 04/09 – 09/09* 09/10 – 13/10	31	20
3	Eastern boundary of the southern field parcel – located on a fence post adjacent to A429 road, with microphone facing west (modified grassland).	23/05 – 27/05 24/06 – 28/06 23/07 – 27/07 19/08 – 23/08 15/09 – 19/09 14/10 – 19/10	25/07 – 29/07 20/08 – 24/08 04/09 – 09/09* 09/10 – 13/10	31	20
4	South-west boundary of the Site – located on a fence post with microphone facing east (modified grassland).	23/05 – 27/05 24/06 – 28/06 23/07 – 27/07 19/08 – 23/08 15/09 – 19/09 14/10 – 19/10	25/07 – 29/07 20/08 – 24/08 04/09 – 09/09* 09/10 – 13/10	31	20
5	Central portion of the Site along the north-eastern boundary – located on fence post with microphone facing south-east (modified grassland).	n/a	25/07 – 29/07 20/08 – 24/08 04/09 – 09/09* 09/10 – 13/10	n/a	20
6	North-east boundary of the Site – located on a fence post with the microphone facing south-west (modified grassland).	n/a	25/07 – 29/07 20/08 – 24/08 04/09 – 09/09* 17/10 – 21/10	n/a	20

*Due to a low number of recordings as a result of poor weather on the 05/09/24, this night was excluded from analysis

3 Limitations

Due to seasonal constraints, it has not been possible to complete the full seasonal coverage of update bat activity surveys required by current survey guidance (Collins 2023). Further survey is scheduled for the months of April, May and June 2025, and the results and assessment of effects will be submitted to Wiltshire Council as an Addendum to the EcIA.

There were no limitations to the surveys completed to-date that are considered to affect the reliability of the bat activity assessment. Minor limitations are as follows:

- The 2024 static detector surveys utilised full spectrum recording (Anabat Express FS) with six detectors deployed, whereas 2020 surveys were recorded in zero-crossing (Anabat express) with four detectors deployed. Datasets are therefore not directly comparable.
- Night-time bat walkover surveys were undertaken in 2024 following the latest BCT guidelines (2023), whereas the 2020 transect survey used the best practice guidance available at the time of the survey (BCT 2016). Datasets are therefore not directly comparable.
- The survey area for the bat surveys undertaken in 2024 deviated very slightly from that survey in 2020, with the exclusion of a small area of woodland to the southeast of the Site, and the inclusion of a section of a section of the B4014 road to the north. However, as the road section was not surveyed due to safety concerns and the woodland now lies outside the application boundary, this is not considered to be a significant limitation.
- Static detector Position 1 suffered a malfunction in September 2024, with no data collected for this Position during this month. Due to the large dataset including data collected in all other surveyed months, this is not considered to be a significant limitation.
- Static detector Position 6 suffered a malfunction in October 2024 and was subsequently re-deployed within the same month.
- Nationwide Covid-19 lockdown restrictions did not permit bat activity surveys during April 2020, and safety concerns relating to livestock onsite prevented a bat transect survey from being undertaken in May 2020.

4 Analysis

2020 surveys

All bat detector data were downloaded and analysed using 'AnalookW' (Titley Electronics). Datasets from transect and static detector surveys were processed using R version 3.5.2 (R Core Team, 2018).

For the static detector data, 'registrations' for each species were defined as the series of pulses within a single Anabat Express Zero Crossing file. The Anabat Express hardware imposes a limit of 15 seconds per file, but also a limit of 32k for the total file length and 16384 transitions within the file (Chris Corben, Titley Electronics, pers. comm. 12/06/2017). 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).

2024 surveys

All bat detector data was downloaded and analysed using 'Anabat Insight v2.0.8' (Titley Electronics). For the night-time bat walkover and static detector surveys, bat registrations for each species were defined as a series of pulses within a single Anabat Insight Full Spectrum (WAV) file.

All static detector recordings were analysed using species identification algorithms (British Trust for Ornithology (BTO) Acoustic Pipeline; <https://www.bto.org/our-science/products-and-technologies/bto-acoustic-pipeline/how-acoustic-pipeline-works>). The maximum WAV file length of recordings was set to five seconds to optimise the performance of the BTO Acoustic Pipeline software. The BTO pipeline processes recordings from the UK with regional classifiers using full spectrum data processing. Each five-second file was assigned to species level using this system, along with an independent estimate of error in species identification. Following this analysis, all non-Pipistrellus calls (excluding *Pipistrellus nathusii*) and low confidence calls (less than 0.5 probability) were manually checked by EAD Ecology staff to confirm identification, using Anabat Insight v2.0.08 (Titley Electronics).

The bat registrations recorded during the night-time bat walkover survey were analysed manually by EAD Ecology staff, using Anabat Insight, 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).

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 been 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 A11.2 were identified as 'big bat' or *Nyctalus* / *Eptesicus* bats.

Table A11.2. Registration parameters used to distinguish *Nyctalus* / *Eptesicus* bats

Species	Characteristic Registration Parameters
Noctule <i>Nyctalus noctula</i>	Registration shows two types of alternating frequency Peak frequency below 21 kHz
Leisler's <i>N. leisleri</i>	Registration shows two types of alternating frequency Peak frequency above 24 kHz
Serotine <i>Eptesicus serotinus</i>	Registrations are of a single, consistent type Peak frequency between 24 kHz and 32 kHz

5 Results

At least ten species were recorded during the 2020 and 2024 bat surveys. Species name abbreviations used in the results hereafter are provided in Table A11.3.

Table A11.3 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
Noctule	<i>Nyctalus noctule</i>	Nn
Nyctalus bat	<i>Nyctalus</i> sp.	Nysp
Serotine	<i>Eptesicus serotinus</i>	Es
Noctule, serotine or Leisler's bat	<i>Eptesicus</i> / <i>Nyctalus</i> sp.	EorNy
Barbastelle	<i>Barbastelle barbastellus</i>	Bb
Myotis bat	<i>Myotis</i> sp.	Mysp.
Long-eared bat	<i>Plecotus</i> sp.	Plsp.
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	LHS

Transect survey (2020)

A total of 268 bat registrations from at least five species were recorded during the 2020 bat transect surveys. Common pipistrelle accounted for the majority of all registrations (53%) followed by noctule (18%) and soprano pipistrelle (16%). Other bat species included *Myotis* species (10%) and serotine (3%).

Figure A11.2 shows relative densities of bat registrations across the Site with areas of higher activity shown in dark green. Elevated levels of bat activity were recorded in three core areas: along the north-eastern hedgerow boundary where the two fields meet; alongside hedgerows in the west of the Site; and in the sheltered south-west corner of the Site adjacent to woodland. Activity in these core areas was dominated by common pipistrelle and soprano pipistrelle, with occasional *Myotis* bat registrations. The highest concentration of noctule recordings were adjacent to woodland in the south-west corner of the Site and along the eastern boundary leading away from the adjacent woodland. A total of 34 noctule bat registrations were recorded here; this equates to 72% of all noctule registrations recorded throughout the transect survey period.

Night-time Bat Walkover Surveys (2024)

At least three bat species were recorded within and adjacent to the Site, with the majority of calls from common pipistrelle and soprano pipistrelle bats. These are both common and widespread bat species. Common pipistrelle and soprano pipistrelle were recorded foraging along boundary hedgerows with the majority of activity concentrated around mature trees providing a sheltered foraging area. A small number of *Myotis* sp. calls (three registrations) were recorded from bats commuting and foraging along boundary hedgerows during the Night-time Bat Walkover Survey in August only; refer to Figure A11.1.

Weather conditions recorded during the night-time bat walkover surveys are provided in Table A11.4

Table A11.4: Weather conditions recorded during the night-time bat walkover surveys

Date	Time at start/ end of survey period	Sunset	Cloud (Oktas)	Wind speed (Beaufort)	Temp. (C)
17 August 2024	20:26	20:26	2/8	2	18
	22:56		3/8	3	15
17 October 2024	18:09	18:09	2/8	0	13
	20:09		1/8	0	12

Static detector surveys (2020)

At least 10 bat species were recorded during the static detector survey with an overall total of 40,968 registrations across the four static detector positions, and an overall BAI (Bat Activity Index; registrations per hour of recording) score of 30.54 was recorded for the Site. The highest levels of bat activity were recorded at Position 2 (BAI 59.32) which was located along the eastern boundary of the northern field, with species-rich hedgerow and mature trees in the vicinity. Position 3 and Position 4, located along the eastern boundary and western boundary of the south-eastern field, recorded BAI scores of 27.54 and 25.54 respectively. Position 1 was located in the south of the Site alongside a species-rich hedgerow, and recorded a BAI score of 9.78. Monthly bat activity levels varied between positions; activity levels were at their highest in July at Position 4, August at Position 2 and September at Positions 1 and 3. In contrast, all static detector positions recorded their lowest bat activity in October. Activity levels at Position 1 remained relatively consistent throughout the survey period.

Common pipistrelle was the most abundant species comprising 61.8% of all recordings, followed by noctule (16.36%), soprano pipistrelle (11.86%) and *Myotis* species (8.16%). Other species recorded on static detectors but accounting for less than 1% of registrations were barbastelle, serotine, lesser horseshoe bat (LHS), greater horseshoe bat (GHS), Nathusius' pipistrelle and long-eared bat. Common pipistrelle was the most abundant species recorded at Position 1 (BAI 5.70), Position 2 (BAI 42.19) and Position 4 (BAI 18.67), and noctule was the

most abundant species recorded at Position 3 (BAI 17.86). *Myotis* bat activity was recorded at all four static detector positions during every month of the survey period, with the exception of Position 3 during May. The highest activity was recorded at Position 2 (2185 bat registrations; BAI 6.52), followed by Position 4 and Position 1 (BAI 2.32; 778 bat registrations and BAI 1.1; 367 bat registrations, respectively). *Myotis* bat activity was considerably lower at Position 3, recording 11 bat registrations overall (BAI 0.03). Long-eared bats were recorded at all four positions with highest activity levels recorded at Position 1 (BAI 0.07).

Barbastelle was recorded at Positions 1 and 4 in August and September, and Position 2 in September; overall activity levels for this species did not exceed 0.1 registrations per hour at any position. Two GHS registrations were recorded on separate evenings in September at Position 4 (BAI 0.01). LHS was recorded at all positions apart from Position 3; activity was highest at Position 4 (BAI 0.08) with activity recorded every month throughout the survey period (May - October). The overall BAI for LHS within the Site was 0.04.

Static detector surveys (2024)

In 2024, at least eight bat species were identified during the static detector surveys, with a cumulative total of 46,378 registrations recorded across six static detector locations. Common pipistrelle accounted for the highest number of registrations within the Site (63.32%), followed by *Myotis* species (17.03%), soprano pipistrelle (15.34%) and noctule (1.71%). Other species recorded but accounting for less than one percent of the registrations included 'noctule, serotine or Leisler's bat', serotine, *Nyctalus* species, long-eared bat, lesser horseshoe bat and barbastelle.

Position 2 was the only static to record levels of bat activity above the mean bat activity index (BAI) recorded across the Site (BAI 34.99). Bat activity levels were highest at Position 2, which recorded a BAI of 146.77, compared to a BAI of 16.76 at Position 5 which recorded the second highest bat activity levels. Activity at Position 2 was dominated by three species (common pipistrelle, *Myotis* bat and soprano pipistrelle), comprising 99% of registrations recorded at this location. Position 5 followed a similar trend to Position 1, with common pipistrelle, soprano pipistrelle and *Myotis* species comprising 89% of bat activity; refer to Figure A11.1.

Lowest bat activity was recorded at Position 6 (BAI 4.55). Position 6 was located on the north-eastern boundary of the Site adjacent to the road.

Light-averse bat species recorded within the Site included *Myotis* bat, long-eared bat, lesser horseshoe bat and barbastelle. *Myotis* bat activity was recorded at all positions with the highest levels of activity recorded at Position 2 (6594 registrations; BAI 28.63), located in the north-east of the Site on the eastern boundary. A peak of *Myotis* bat activity was recorded in August to October (95% of all registrations). Long-eared bat activity was recorded at all static detector locations, with the highest activity recorded at Position 5 (BAI 0.38; located in the north-west of the Site). Barbastelle were recorded in relatively low numbers within the Site (three or fewer registrations) at Positions 1, 3, 4 and 6. The highest barbastelle bat activity recorded within the survey was recorded at Position 2, where 22 registrations were recorded (BAI 0.10). All of these registrations were recorded in September. The majority of these registrations (15 registrations) occurred on one night (06/09/2024). Position 5 recorded 17 barbastelle registrations (BAI 0.07). Of these, one registration was recorded in July and 16 registrations were recorded in September.

Lesser horseshoe bats (LHS) were recorded at all static detector positions with a total of 198 registrations across the survey period. LHS activity was highest at Position 5 (BAI 0.50, comprising 58.6% of all LHS recordings), followed by Position 4 (BAI 0.19, comprising 22.2% of all LHS recordings). These detectors were located along the western boundary of the Site; refer to Figure A11.1. The highest LHS activity was recorded at Position 5 in August (111 registrations; BAI 2.05). However, overall LHS registrations were only recorded on 39 nights of the total 120 surveyed nights across all static positions between July-October (32.5%), this suggests

that the Site is not a core commuting/foraging location for LHS with activity sporadic rather than consistent or regular over consecutive nights.

Monthly variation in LHS activity was observed within the Site. LHS activity (BAI) was highest in August at Positions 1, 3, 4, 5, and 6 and in September at Position 2. The largest observed peak in LHS activity was recorded in August. The peak number of LHS registrations recorded on a single night at a single detector location was 48 registrations (Position 5; 20/08/2024), 29 registrations (Position 5; 22/08/2024), 23 registrations (Position 5; 24/08/2024) and 19 registrations (Position 4; 23/08/2024). However, these nights are considered anomalies and a result of opportunistic foraging. The data indicates that on nights when LHS bat activity was recorded, excluding the above, between 1 and 7 registrations were recorded over any one-night period on any one detector.

The temporal activity patterns of LHS registrations across the survey period (July - October) are generally indicative of commuting and foraging activity within the Site; refer to Graph A11.6⁴. The earliest registrations recorded on Site were approximately 17 minutes after sunset which suggests these bats are associated with a nearby roost.

A breakdown of when LHS registrations were recorded within the night is provided for each month in Table A11.7. This shows there was higher LHS activity within proximity of sunset in August.

LHS foraging activity was recorded within the Site as defined by Miller (2001) at Position 5 in August. Evidence of foraging contacts were recorded at Position 4 (August), Position 4 (October), Position 5 (September) and Position 6 (August).

6 Summary

The frequency and distribution of bats within the Site in both 2020 and 2024 was similar. During the static detector surveys, Position 2 (located along the eastern boundary of the northern field) recorded the highest number of registrations in both 2020 and 2024. Bat activity in 2024 was dominated by common pipistrelle, soprano pipistrelle and *Myotis* species. Bat activity in 2020 showed the same trend but with a greater abundance of noctule registrations across the Site (16.36% during the 2020 static surveys compared to 1.71% during the 2024 static surveys). No greater horseshoes were recorded in 2024, compared with two registrations recorded in 2020. The 2020 transect survey recorded serotine and noctule, which were not recorded during the 2024 night-time bat walkover surveys.

7 References

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⁴ Lesser horseshoe bats' median emergence is 31 minutes after sunset (Jones & Rydell, 1994).

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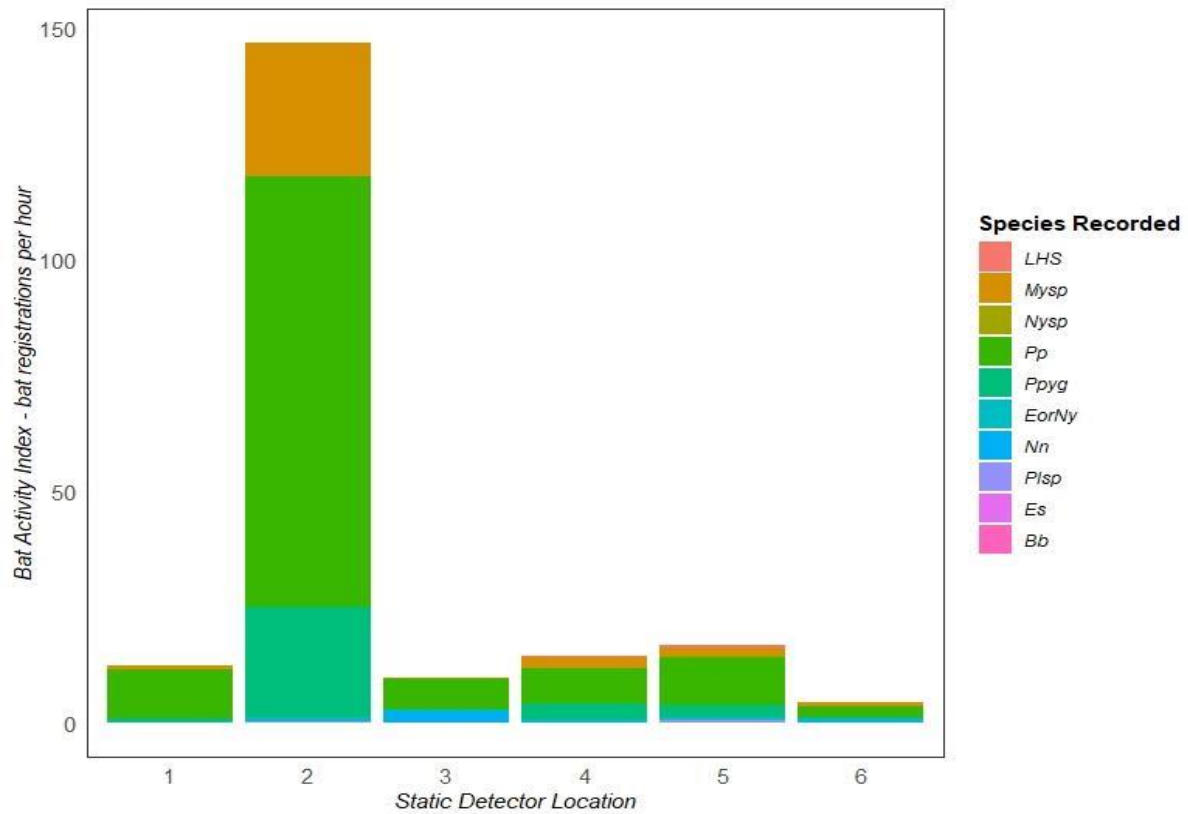
Table A11.5: Number of registrations recorded within the Site (2024)

Static Detector Location	Month (2024)	LHS	Mysp	Nysp	Pp	Ppyg	EorNy	Nn	Plsp	Es	Bb	Total
1	Jul	0	23	31	159	86	2	10	14	0	0	325
1	Aug	7	1	1	22	21	0	0	0	0	0	52
1	Oct	2	87	0	1628	6	0	0	1	0	0	1724
1	Total	9	111	32	1809	113	2	10	15	0	0	2101
2	Jul	4	340	14	6708	411	6	28	6	0	0	7517
2	Aug	1	1624	13	5358	1818	0	13	37	4	0	8868
2	Sep	12	3577	0	8306	3211	158	0	19	5	22	15310
2	Oct	0	1053	0	1050	10	0	0	0	0	0	2113
2	Total	17	6594	27	21422	5450	164	41	62	9	22	33808
3	Jul	0	7	15	193	24	0	24	0	0	0	263
3	Aug	1	5	10	216	25	18	9	5	0	0	289
3	Sep	0	0	64	1055	16	4	525	2	0	2	1668
3	Oct	0	0	5	16	9	0	3	0	0	0	33
3	Total	1	12	94	1480	74	22	561	7	0	2	2253
4	Jul	0	238	22	1185	574	8	7	2	2	0	2038
4	Aug	31	65	0	288	35	64	0	22	0	2	507
4	Sep	4	48	0	275	170	32	3	1	0	0	533
4	Oct	9	195	0	0	13	0	0	2	0	0	219
4	Total	44	546	22	1748	792	104	10	27	2	2	3297
5	Jul	1	11	6	1157	121	52	14	21	1	1	1385
5	Aug	111	149	10	614	414	69	2	39	1	0	1409
5	Sep	3	277	34	612	55	0	22	28	5	16	1052
5	Oct	1	2	1	9	1	0	0	0	0	0	14
5	Total	116	439	51	2392	591	121	38	88	7	17	3860
6	Jul	1	1	16	30	11	1	25	2	0	0	87
6	Aug	7	17	11	278	39	30	12	10	0	1	405
6	Sep	0	64	6	111	20	14	95	6	0	1	317
6	Oct	3	112	14	95	24	0	0	0	1	1	250
6	Total	11	194	47	514	94	45	132	18	1	3	1059
Total	-	198	7896	273	29365	7114	458	792	217	19	46	46378

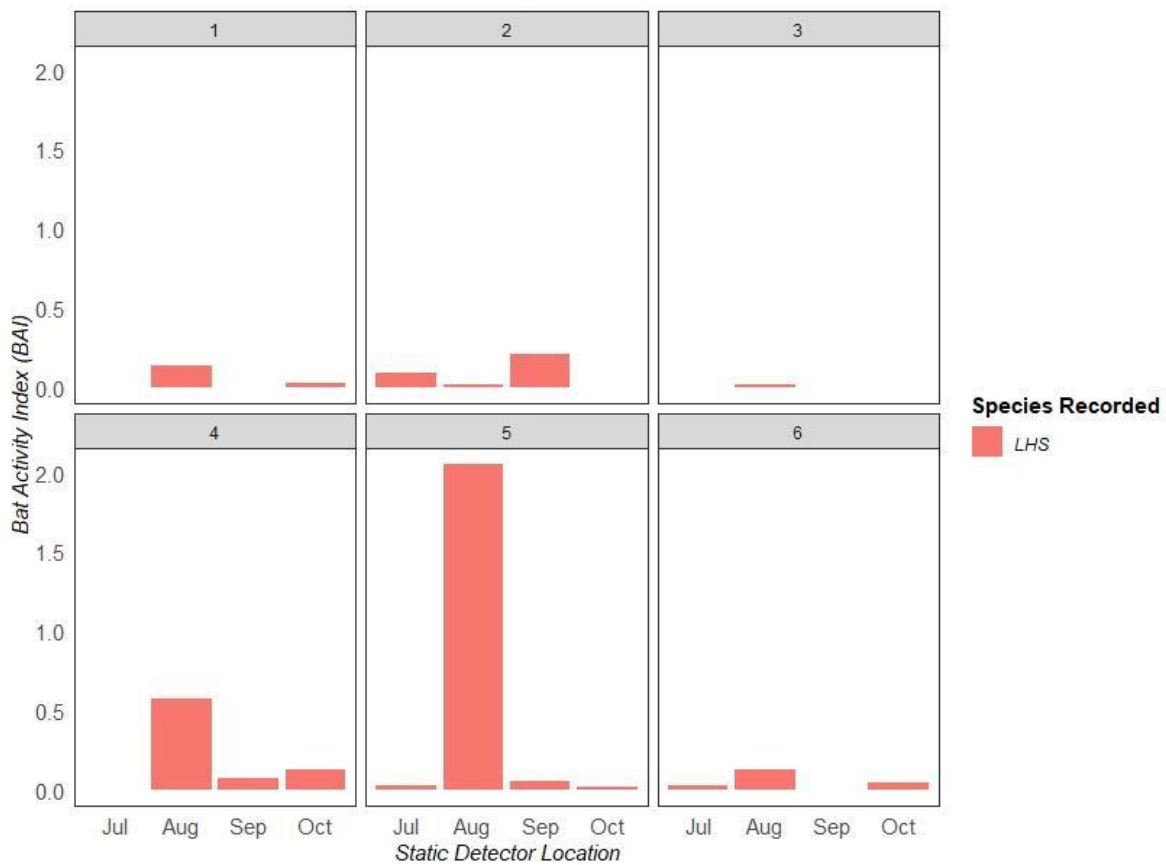
Table A11.6: Bat Activity Index (BAI) recorded within the Site (2024)

Static Detector Location	Month (2024)	LHS	Mysp	Nysp	Pp	Ppyg	EorNy	Nn	Plsp	Es	Bb	Total
1	Jul	0.00	0.49	0.66	3.40	1.84	0.04	0.21	0.30	0.00	0.00	6.95
1	Aug	0.13	0.02	0.02	0.41	0.39	0.00	0.00	0.00	0.00	0.00	0.96
1	Oct	0.03	1.24	0.00	23.16	0.09	0.00	0.00	0.01	0.00	0.00	24.52
1	Total	0.05	0.65	0.19	10.57	0.66	0.01	0.06	0.09	0.00	0.00	12.27
2	Jul	0.09	7.27	0.30	143.42	8.79	0.13	0.60	0.13	0.00	0.00	160.72
2	Aug	0.02	30.00	0.24	98.98	33.59	0.00	0.24	0.68	0.07	0.00	163.83
2	Sep	0.20	60.48	0.00	140.45	54.29	2.67	0.00	0.32	0.08	0.37	258.87
2	Oct	0.00	14.98	0.00	14.93	0.14	0.00	0.00	0.00	0.00	0.00	30.05
2	Total	0.07	28.63	0.12	93.00	23.66	0.71	0.18	0.27	0.04	0.10	146.77
3	Jul	0.00	0.15	0.32	4.13	0.51	0.00	0.51	0.00	0.00	0.00	5.62
3	Aug	0.02	0.09	0.18	3.99	0.46	0.33	0.17	0.09	0.00	0.00	5.34
3	Sep	0.00	0.00	1.08	17.84	0.27	0.07	8.88	0.03	0.00	0.03	28.20
3	Oct	0.00	0.00	0.07	0.23	0.13	0.00	0.04	0.00	0.00	0.00	0.47
3	Total	0.00	0.05	0.41	6.43	0.32	0.10	2.44	0.03	0.00	0.01	9.78
4	Jul	0.00	5.09	0.47	25.34	12.27	0.17	0.15	0.04	0.04	0.00	43.57
4	Aug	0.57	1.20	0.00	5.32	0.65	1.18	0.00	0.41	0.00	0.04	9.37
4	Sep	0.07	0.81	0.00	4.65	2.87	0.54	0.05	0.02	0.00	0.00	9.01
4	Oct	0.13	2.77	0.00	0.00	0.18	0.00	0.00	0.03	0.00	0.00	3.12
4	Total	0.19	2.37	0.10	7.59	3.44	0.45	0.04	0.12	0.01	0.01	14.31
5	Jul	0.02	0.24	0.13	24.74	2.59	1.11	0.30	0.45	0.02	0.02	29.61
5	Aug	2.05	2.75	0.18	11.34	7.65	1.27	0.04	0.72	0.02	0.00	26.03
5	Sep	0.05	4.68	0.57	10.35	0.93	0.00	0.37	0.47	0.08	0.27	17.79
5	Oct	0.01	0.03	0.01	0.13	0.01	0.00	0.00	0.00	0.00	0.00	0.20
5	Total	0.50	1.91	0.22	10.38	2.57	0.53	0.16	0.38	0.03	0.07	16.76
6	Jul	0.02	0.02	0.34	0.64	0.24	0.02	0.53	0.04	0.00	0.00	1.86
6	Aug	0.13	0.31	0.20	5.14	0.72	0.55	0.22	0.18	0.00	0.02	7.48
6	Sep	0.00	1.08	0.10	1.88	0.34	0.24	1.61	0.10	0.00	0.02	5.36
6	Oct	0.04	1.54	0.19	1.30	0.33	0.00	0.00	0.00	0.01	0.01	3.43
6	Total	0.05	0.83	0.20	2.21	0.40	0.19	0.57	0.08	0.00	0.01	4.55
Total	-	0.15	5.96	0.21	22.15	5.37	0.35	0.60	0.16	0.01	0.03	34.99

Graph A11.1: Bat Activity Index (BAI) recorded across the Site (2024)



Graph A11.2: Lesser horseshoe bat (LHS) activity recorded across the Site (2024)



Graph A11.3: Temporal distribution of LHS registrations within the Site (2024); all static detector locations.

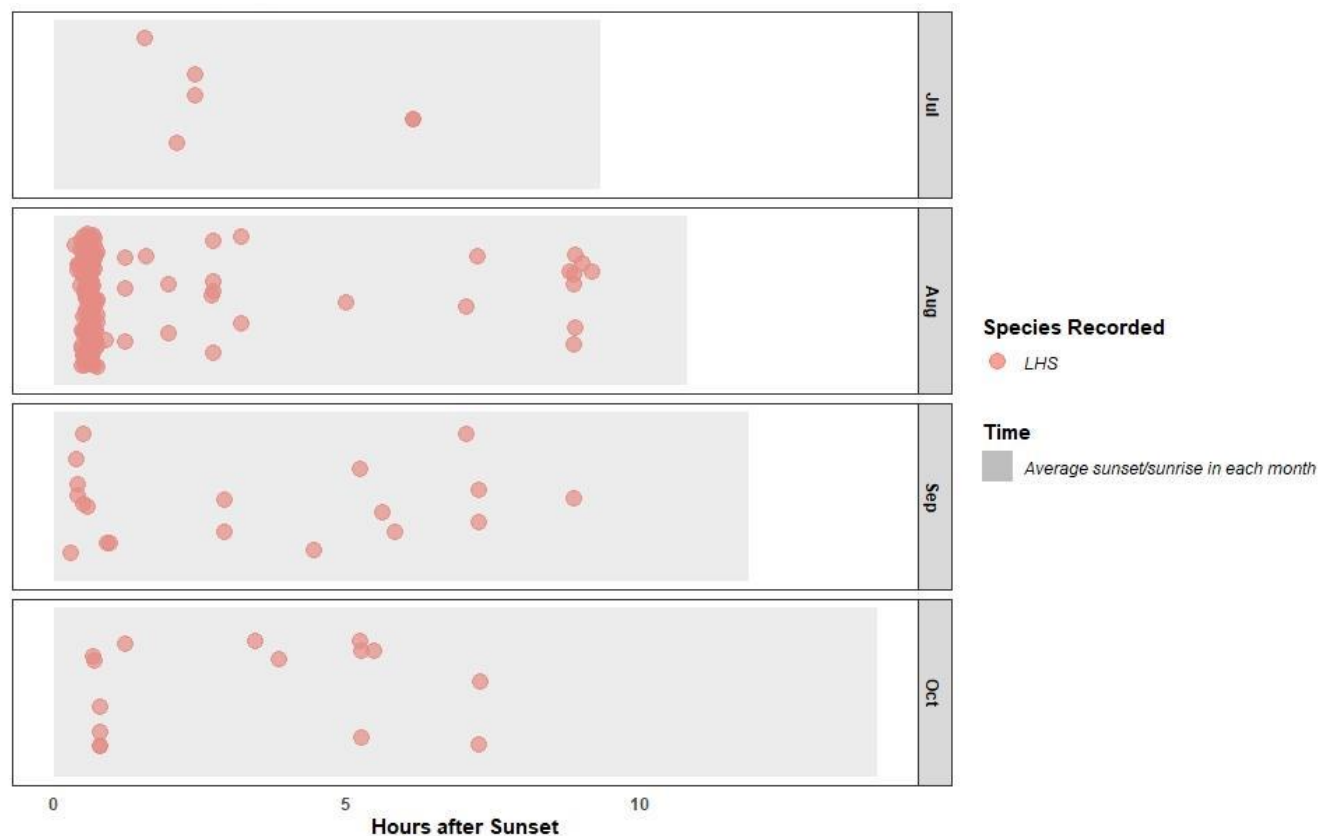
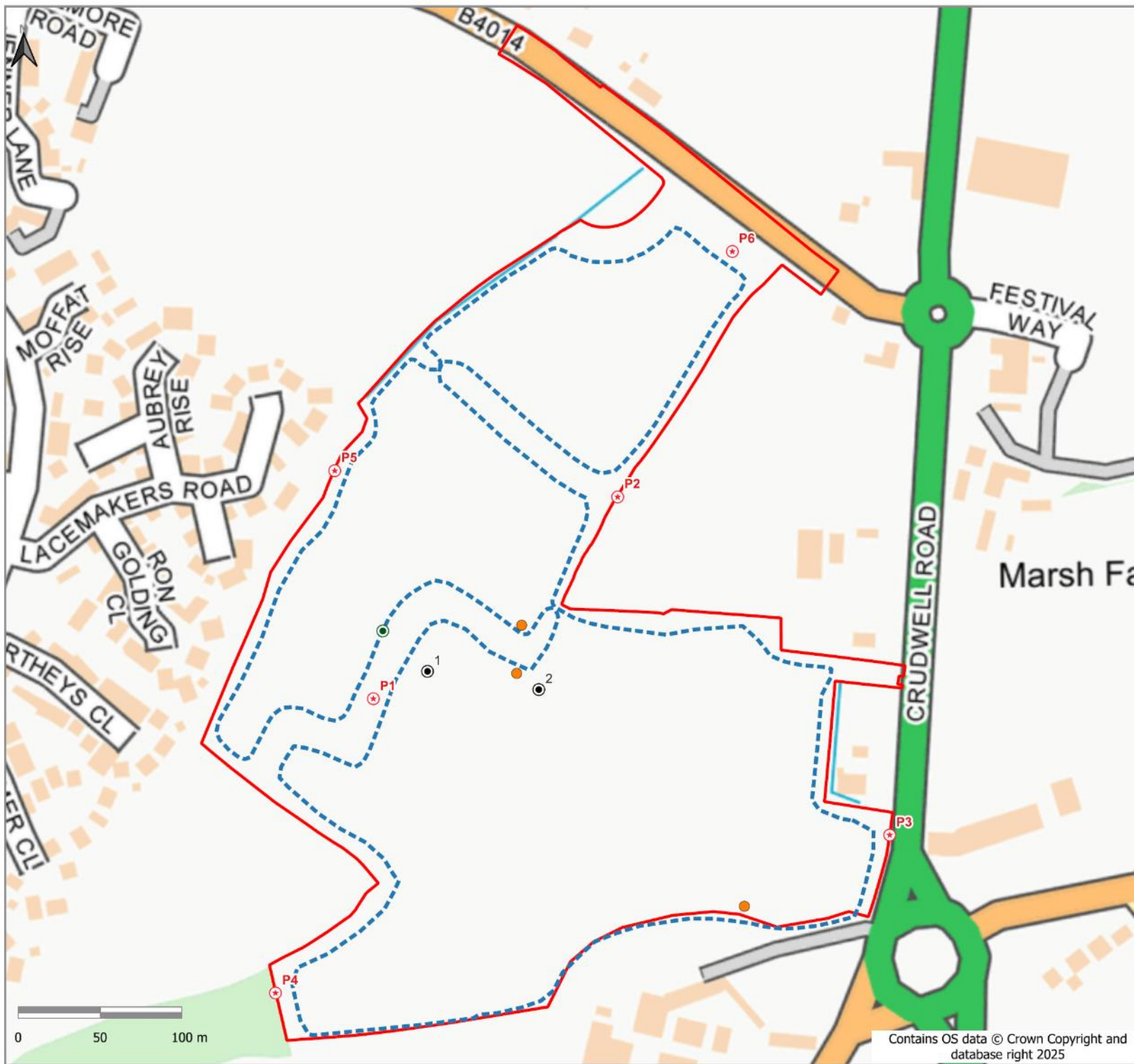


Table A11.7 Temporal distribution of LHS registrations throughout the night in each month across the Site (2024)

Month (2024)	Number of LHS registrations	Percentage of LHS registrations within 90 minutes of sunset	Percentage of LHS registrations recorded within the main portion of the night	Percentage of LHS registrations within 60 minutes of sunrise
July	6	0.0% (0 registrations)	100% (6 registrations)	0.0% (0 registrations)
August	158	86.7% (137 registrations)	8.2% (13 registrations)	5.1% (8 registrations)
September	19	47.4% (9 registrations)	52.6% (10 registrations)	0.0% (0 registrations)
October	15	46.7% (7 registrations)	53.3% (8 registrations)	0.0% (0 registrations)
Total	198	77.3% (153 registrations)	18.7% (37 registrations)	4.0% (8 registrations)

Figure A11.1: Bat survey plan



Key

- Site boundary
- Static detector location
- Start point
- NBW notes
- Walkover route

NBW Results

- Myotis registration

Night-time Bat Walkover Notes	
No.	Habitat use by bats
1	Several common and soprano pipistrelle bats recorded foraging associated with hedgerows and mature trees.
2	Three Myotis sp. registrations were recorded in August only indicating an occasional commuting route through the site.



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Gleeson Land
Land North of Whychurch Farm, Malmesbury
Night-time Bat Walkover Plan
18/02/2025

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**Figure A11.2: Bat Activity Heat Map (2020 Transect
Activity)**

Appendix 12: Bat roost survey results

Bat roost survey of trees (2020)

1 Methodology

Preliminary roost assessment

All trees within the Site were subject to an assessment of their suitability to support roosting bats on 15 June 2020, following Bat Conservation Trust (BCT) Guidelines (Collins [ed.] 2016). This involved a detailed ground-based inspection of each tree using binoculars to record potential bat roost features such as rot holes and hazard beams. Trees assessed as having 'Low' or 'Negligible' bat roost suitability were not recorded.

Dusk emergence/dawn re-entry surveys

Two trees with 'Moderate' bat roost suitability were considered to be potentially affected by the development proposals at the time of survey (refer to Figure A12.1). Further dusk emergence and dawn re-entry surveys were undertaken to determine roost presence / likely absence.

The dusk survey commenced 15 minutes before sunset and continued for up to 90 minutes after sunset. The dawn survey approximately commenced 90 minutes before sunrise, and finished at sunrise. Surveyors were located in suitable positions around the tree to allow for clear observation of potential bat roost features. Surveyors were equipped with broadband bat detectors (Anabat Express and Batbox duet) in order to record any echolocation calls ('registrations') for subsequent analysis.

2 Limitations

There were no limitations to the preliminary roost assessment or dusk emergence/dawn re-entry surveys.

3 Results

Preliminary roost assessment

Two trees with 'Moderate' bat roost suitability were identified within the Site; refer to Table A12.1 and Figure A12.1. All other trees within the Site were considered to have 'Low' or 'Negligible' roost suitability.

Table A12.1: Preliminary roost assessment of trees

Tree no.	Species	DBH (m)	Description	% Ivy cover	Roost suitability	Roost suitability summary
T1	Pedunculate oak	1.8	Very large mature single-stem	0	Moderate	Three snapped dead limbs
T2	Pedunculate oak	1.0	Mature single-stem	0	Moderate	Dead limb and flaking bark

Dusk emergence/dawn re-entry surveys

In accordance with BCT (Collins [ed.] 2016) guidelines, one dusk emergence survey and one dawn re-entry survey were carried out on trees T1 and T2 in July and September 2020. No bats were recorded emerging from, or re-entering the trees during the surveys. Survey timings and weather conditions are provided in Table A12.2.

Table A12.2: Weather conditions during dusk/dawn surveys

Date	Start	End	Sunset/sunrise	Cloud (Oktas)	Wind speed (Beaufort)	Temp. (C)
28/07/20	20:47	22:32	21:02	1/8	1-2	16
15/09/20	05:15	07:00	06:49	0/8	0-1	14

Bat roost survey of trees (2024/5)

1 Methodology

Ground Level Tree Assessment

All trees within the Site were subject to a Ground Level Tree Assessment (GLTA) on 25 July 2024. This assessment involved a detailed inspection of each tree from ground level using binoculars to record potential bat roost features such as rot holes and hazard beams. The inspections followed Bat Conservation Trust (BCT) guidelines (Collins [ed.] 2023; refer to Table A12.3).

Table A12.3 Guidelines for assessing the potential suitability of 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

Aerial inspection

Trees identified as having ‘PRF-M’ roost suitability, which were determined as being potentially subject to development impacts, were subject to aerial inspections. Assessment of potential impacts was based on the latest available masterplan at the time of survey and proximity to lit development and/or where there was potential fragmentation of key flight lines/foraging habitat. Aerial inspections were undertaken by an ecologist with a Level 2 Class Licence and Tree Climbing and Aerial Rescue Qualification (City and Guilds NPTC Level 2: CS38) using an endoscope on 22 August 2024 and 13 September 2024 in order to confirm presence or absence of roosting bats.

2 Limitations

There were no limitations to the GLTA.

Aerial inspections of the two trees provisionally assessed during the GLTA as PRF-M were undertaken in August and September 2024; one further climbing survey visit is required under the BCT survey guidelines (Collins [ed.] 2023) to confirm absence of roosting bats. The final climbing survey visit will be undertaken in May 2025, and the results will be submitted as an Addendum to the EcIA in June 2025.

3 Results

Ground Level Tree Assessment and aerial inspection

Within the Site, two trees were assessed as having potential for roosting bats - provisionally assessed as PRF-M; refer to Figure A12.1. The results of the GLTA and subsequent aerial inspections completed to date are provided in Table A12.4.

Table A12.4 Preliminary roost assessment of trees – results

Tree Reference	Bat roost features and notes	BCT Roost Category (Collins 2023)	Aerial inspection date	
			22.08.24	13.09.24
1	Mature oak with single stem; DBH 100cm; 0% ivy coverage; multiple broken limbs, larks crack and peeling bark.	PRF-M (Provisional)	No evidence of roosting bats	No evidence of roosting bats

Table A12.4 Preliminary roost assessment of trees – results

Tree Reference	Bat roost features and notes	BCT Roost Category (Collins 2023)	Aerial inspection date	
			22.08.24	13.09.24
2	Mature oak with single stem; DBH 80cm; 0% ivy coverage; holes at base, holes/hollows near top of stem, peeling bark and cracks on limb.	PRF-M (Provisional)	No evidence of roosting bats	No evidence of roosting bats

The climbing surveys completed in August and September 2024 did not record evidence of roosting bats. One further climbing survey visit will be undertaken in May 2025, and the results will be submitted as an Addendum to the EclA in June 2025

4 References

Collins J (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th 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 A12.1: Roost Survey Plan



Key

- Site boundary
- Broadleaved tree

ead
ecology
www.eadecology.co.uk

Gleeson Land
Land North of Whychurch
Farm, Malmesbury

Tree Plan

18/02/2025

Appendix 13: Otter and water vole survey results

Otter and water vole survey

1 Methodology

A water vole and otter survey of the ditch within the Site was undertaken on 04 September 2024. The water vole survey followed standard methodology (The Mammal Society, 2016), which involved recording signs of water voles including burrows, latrines and feeding remains. 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.

2 Limitations

The Water Vole Conservation Handbook (The Mammal Society, 2016) recommends that two water vole survey visits are undertaken; one between Mid-April to June, and one from July to September. Due to time constraints, it has not been possible to complete the second survey visit in advance of the planning application submission. This will be undertaken in May 2025, and the results submitted as an Addendum to the EcIA in June 2025

3 Results

No evidence of water vole or otter was recorded during any of the survey visits. The ditch onsite was considered to provide sub-optimal habitat for water vole or otter due to its dry nature for most of the year.

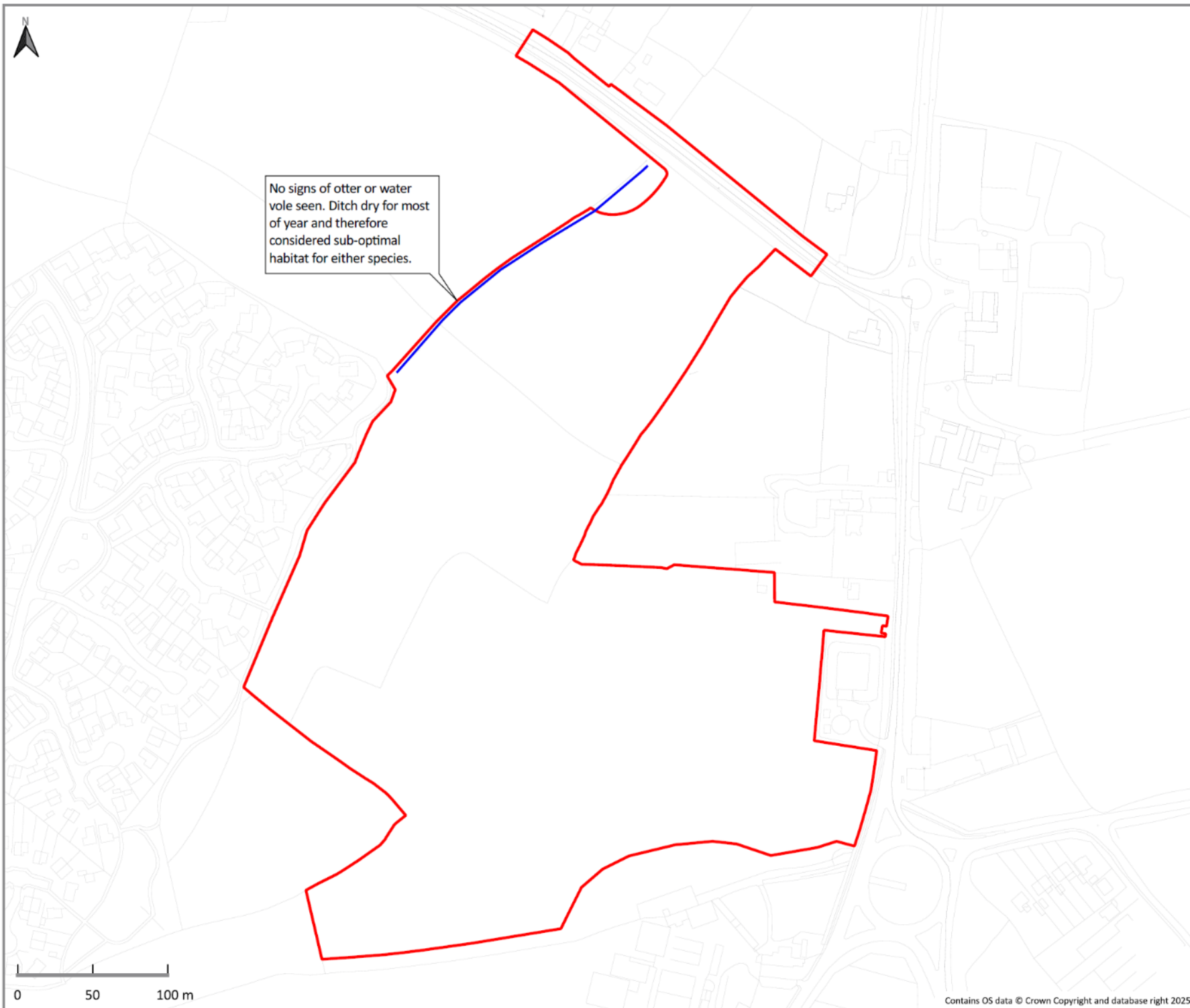
4 References

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 A13.1: Otter and water vole survey plan



Key

- Ditch
- Site boundary

Appendix 14: 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, 2024a), with reference to supporting documents (Defra 2024b and 2024c). The completed metric has been provided as a digital file (Excel spreadsheet).

In line with Statutory BNG Guidance (Defra 2024b), the assessment has been undertaken with reference to the Biodiversity Metric principles (Defra 2024b). As the application is at outline stage, the calculations were based on:

- Softworks plans submitted with a separate Reserved Matters Application (Planning reference: PL/2023/08687); and
- Land Use Parameters Plan (Thrive, 2025; ref: GLEE230809 LUPP.01 Rev: P1; Figure 4), with reference to the Illustrative Masterplan (Thrive, 2025: ref: GLEE240917 IMP.02 Rev: P2; Figure 2).

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 31 July 2024. This assessment followed Defra Statutory Metric methodologies, also referencing the relevant supporting documents (Defra 2024b and 2024c).

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, 2024b), using the integrated Statutory Metric Tree Helper.

Onsite post-development habitats

Post-development onsite habitat areas are based on the softworks plans submitted with a separate Reserved Matters Application (Planning reference: PL/2023/08687); and Land Use Parameters Plan (Thrive, 2025; ref: GLEE230809 LUPP.01 Rev: P1), with reference to the Illustrative Masterplan (Thrive, 2025: ref: GLEE240917 IMP.02 Rev: P2); refer to Figure 2 and 4. 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 2024c). The interventions proposed to achieve the conditions specified in the Metric are detailed in Tables A14.8 – A14.9. 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.

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 2024b), with reference to site-specific information. The Site is not within an area currently covered by a Local Nature Recovery Strategy (LNRS), so the strategic significance has been assigned with reference to Table 8 within the Statutory Biodiversity Metric guidance (Natural England 2024b). Given that there is no alternative document published specifically for the purpose of assigning Strategic Significance within the county, the following criteria was used:

- Habitats meeting the definition of the Wiltshire Biodiversity Action Plan (WBAP) habitats assigned as Medium Strategic Significance (Location ecologically desirable but not in local strategy).
- Non WBAP habitats assigned as Low Strategic Significance (Area / compensation not in local strategy).

Habitats identified within the Site deemed to be of medium strategic significance included ditches and hedgerows.

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 'hatched zone' identified on the Land Use Parameter Plan were assessed as 10% woodland planting (other broadleaved woodland), 30% amenity grassland (modified grassland) and 60% wildflower grassland (other neutral grassland).
- The 'informal open space' areas identified on the Land Use Parameter Plan assessed as 30% amenity grassland (modified grassland), 10% play area (artificial unsealed; unvegetated surface), 20% native scrub planting (mixed scrub) and 40% wildflower grassland (other neutral grassland).
- 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 26.02 'Habitat Units', 15.12 'Hedgerow Units', and 0.53 'Watercourse Units'; refer to Table A14.1 and Figure A14.1.

The post-development biodiversity value of the Site, based on Figure A14.2, is predicted as 36.53 'Habitat Units', 19.47 'Hedgerow Units', and 0.61 'Watercourse Units'. The proposed development would therefore, have potential to demonstrate a net gain of 10.51 Habitat Units (+40.38%), 4.35 Hedgerow Units (+28.77%) and a net gain of 0.08 Watercourse Units (+15.01%); refer to Table A14.1 and Figure A14.2.

The conditions of the baseline habitats, hedgerows and watercourse currently located on the Site are provided in Tables A14.2 – A14.5. The indicative post-construction 'Site habitat creation/enhancement' Biodiversity Units for habitats, hedgerows and watercourse are provided in Tables A14.6 – A14.7.

Table A14.1: BNG Metric Summary ⁵

On-Site baseline pre-development	Habitat units	26.02
	Hedgerow units	15.12
	Watercourse units	0.53
On-Site post-development (Habitat retention, creation & enhancement)	Habitat units	36.53
	Hedgerow units	19.47
	Watercourse units	0.61
Net change (Habitat retention, creation & enhancement)	Habitat units	+10.51 (+40.38%)
	Hedgerow units	+4.35 (+28.77%)
	Watercourse units	+0.08 (+15.01%)

Irreplaceable habitats

No irreplaceable habitats were identified onsite that would be directly affected/ lost by the Proposed Development.

Additionality

In accordance with current guidance, mitigation or compensation for impacts to Special Areas of Conservation (SAC) and European Protected Species can be used 'in part' towards achieving Biodiversity Net Gain⁶. This means that at least 10% of the development's biodiversity units must be related to habitat proposals not providing SAC mitigation/compensation (i.e. SAC mitigation/compensation can contribute up to the point of no net loss). Habitat provision within the Site was not considered to provide mitigation or compensation for impacts to Special Areas of Conservation (SAC) and European Protected Species; therefore, there are no additionality concerns associated with this assessment.

Trading rules

The proposed development satisfy the Metric trading rules for Habitat Units, Hedgerow Units and Watercourse Units.

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 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.

4 Conclusions

The Biodiversity Net Gain calculations based on the plans used in this assessment (refer to Figures A14.1 - A14.2) demonstrates that the development is expected to deliver net gain onsite for Habitat Units (+40.38%), Hedgerow Units (+28.77%) and Watercourse Units (+15.01%).

As this BNG Assessment is based upon an Illustrative Masterplan and Land Use Parameters Plan, updated BNG Assessments will need to be undertaken based on detailed landscape design to satisfy the Biodiversity Net Gain Planning Condition to inform discharge of the Biodiversity Gain Plan.

⁵ Headline figures reflect metric outputs which include built in rounding to two decimal places.

⁶ <https://www.gov.uk/guidance/what-you-can-count-towards-a-developments-biodiversity-net-gain-bng>

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>

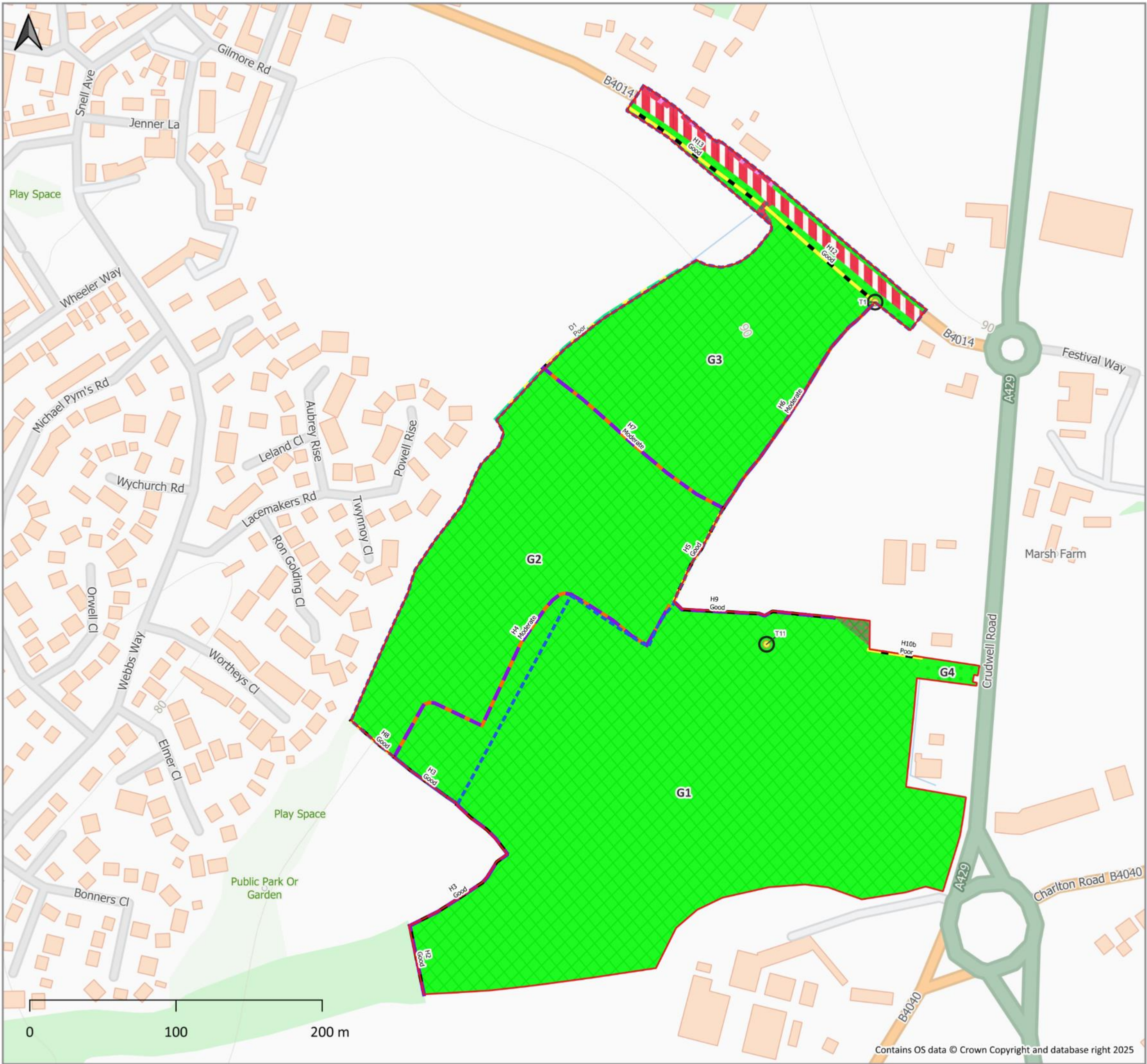
Defra (2024a). The Statutory Biodiversity Metric Auditing and accounting for biodiversity calculation tool. February 2024.

Defra (2024b). The Statutory Biodiversity Metric User Guide. July 2024.

Defra (2024c). The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology. July 2024.

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

**Figure A14.1: Biodiversity Net Gain Assessment:
Baseline Plan**



Key

- Site boundary
- Site boundary
 - Habitat creation within this area has been taken from the softworks plans submitted with a separate Reserved Matters Application (Planning reference: PL/2023/08687)
- Individual Trees
- Existing Large Rural Tree
- Hedgerows
- Native hedgerow
 - Species-rich native hedgerow
 - Species-rich native hedgerow - associated with bank or ditch
- Watercourses
- Ditches
- Habitats
- Developed land; sealed surface
 - Modified grassland
 - Other woodland; broadleaved
 - Vegetated garden
 - Bare ground
- Habitat Condition
- Moderate
 - Poor
 - N/A - Other
 - Condition Assessment N/A



Gleeson Land

Land North of Whychurch Farm, Malmesbury

Biodiversity Net Gain Assessment: Baseline Plan

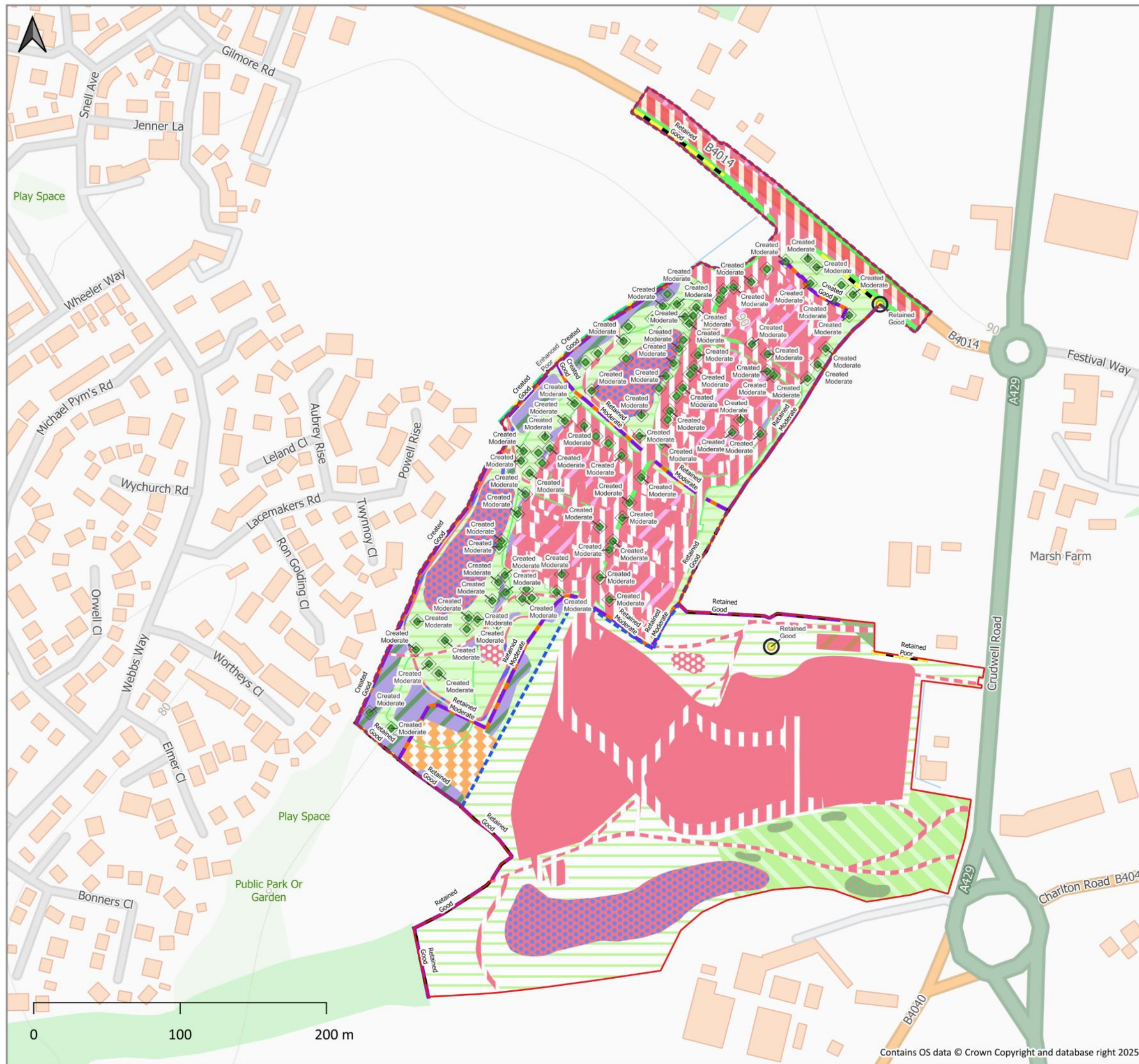
20/02/2025

Created by: EH

Scale at A3 1:2,500

Contains OS data © Crown Copyright and database right 2025

Figure A14.2: Biodiversity Net Gain Assessment: Post-intervention Plan



Key

Site boundary

- Site boundary
- Habitat creation within this area has been taken from the softworks plans submitted with a separate Reserved Matters Application (Planning reference: PL/2023/08687)

Individual Trees

- Proposed Small Urban Tree
- Retained Large Rural Tree

Hedgerows

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

Watercourses

- Ditches

Habitats

- Allotments
- Artificial unvegetated, unsealed surface
- Bioswale
- Informal Public Open Space (30% Amenity grassland, 10% play area, 20% native scrub planting, 40% wildflower grassland)
- Residential areas (70:30 split) (Housing:Gardens)
- Developed land; sealed surface
- Introduced shrub
- Woodland planting open space (10% Woodland planting, 30% amenity grassland, 60% wildflower grassland)
- Mixed scrub
- Modified grassland
- Other neutral grassland
- Other woodland; broadleaved
- Sustainable drainage system
- Traditional orchards
- Vegetated garden

Table A14.2 Baseline Habitat Condition Assessment Results

Habitat type	Reference code	Condition assessment results
Grassland - Modified grassland	G4	Moderate condition • Passes condition criteria A – average of 6-8 species recorded per metre square. • Passes condition criteria B – sward height varied. • Fails condition criteria C – 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 not between 1-10%. • Fails condition criteria F – bracken recorded. • Passes condition criteria G – no invasive species recorded and cover of undesirable species was less than 5%. Passes four criteria therefore 'Moderate' condition.
Grassland - Modified grassland	G5	Moderate condition • Passes condition criteria A – average of 6-8 species recorded per metre square. • Passes condition criteria B – sward height varied. • Passes condition criteria C – scattered scrub not present in grassland. • Fails condition criteria D – physical damage present on more than 5% of grassland. • Fails condition criteria E – bare ground coverage not between 1-10%. • Passes condition criteria F – no bracken recorded. • Passes condition criteria G – no invasive species recorded and cover of undesirable species was less than 5%. Passes five criteria therefore 'Moderate' condition.
Grassland - Modified grassland	G1, G2, G3 & G6	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 not between 1-10%. • 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.
Urban – Bare ground	U1	Poor condition • Fails condition criteria A – vegetation structure not varied and a single ecotone occupies greater than 80%. Of the total area.

Table A14.2 Baseline Habitat Condition Assessment Results

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. Passes one criteria therefore 'Poor' condition.
Urban – Developed land; sealed surface	U2	N/A – Other Condition assessment not applicable.
Urban – Vegetated garden	U3	Condition Assessment N/A Condition assessment not applicable.
Woodland and forest – Other broadleaved; woodland	W1	Poor condition The following scores will be targeted for each of the criteria: A – 1, B – 3, C -3, D – 3, E – 2, F – 3, G – 1, H – 2, I - 1, J – 2, K – 1, L – 1, M – 1 (Score: 24); therefore 'Poor' condition.

Table A14.3 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)			
2	P	P	P	P	F	P	P	P	N	N/A	N/A	N	Y	G
3	P	P	P	P	P	F	P	P	N	N/A	N/A	N	Y	G
4	P	P	P	P	F	F	P	P	N	N/A	N/A	Y	Y	M
5	P	P	P	P	P	F	P	P	N	N/A	N/A	N	N	G
6	P	P	P	P	F	F	P	P	N	N/A	N/A	Y	Y	M
7	P	P	P	P	F	F	P	P	N	N/A	N/A	Y	Y	M
8	P	P	P	P	P	F	P	P	N	N/A	N/A	N	Y	G
9	P	P	P	P	F	P	P	P	N	N/A	N/A	N	Y	G
10a	P	F	P	P	F	P	F	P	N	N/A	N/A	N	Y	M
10b	F	F	F	F	F	P	P	P	N	N/A	N/A	N	Y	P
11	P	P	P	P	F	F	P	P	N	N/A	N/A	N	Y	M
12	P	P	P	P	P	P	P	P	N	N/A	N/A	N	Y	G
13	P	P	P	P	P	P	P	P	N	N/A	N/A	N	Y	G

A reduction in the Site boundary meant 'H1' was no longer relevant to the application and it has consequently been excluded from the assessment.

Table A14.4: Baseline Watercourse Condition Assessment Results (excluding RCA habitats).

Habitat type	Parcel reference	Condition	Condition assessment results
Ditches	D1	Poor	Poor condition • Fails 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. • Fails 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. • Fails condition criteria H – no non-native species recorded. Two condition criteria passed therefore 'Poor' condition.

Table A14.5: 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
T1	Large	Precautionary assessment.						Good
T11	Large	Precautionary assessment.						Good

Table A14.6: Post-Construction Management and Interventions

Habitat	Predicted condition	Justification
Urban Allotments –	Poor	Proposed management of tall forbs is likely to ensure the following criteria are met: C – Absence of invasive non-native species and species of detriment to native wildlife.
Urban Artificial unvegetated; unsealed surface –	N/A - Other	Not applicable.
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	Not applicable.
Urban Introduced shrub –	Condition Assessment N/A	Not applicable.
Heathland and shrub – Mixed scrub	Moderate / Poor	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). Areas adjacent to Play Areas have been set to ‘Poor’ condition as a precaution.
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 / Poor	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

Table A14.6: Post-Construction Management and Interventions

Habitat	Predicted condition	Justification
		grassland habitat type are very clearly and easily visible throughout the sward. 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. Areas adjacent to Play Areas have been set to 'Poor' condition as a precaution.
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).
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).
Urban – Vegetated garden	Condition Assessment N/A	Not applicable.
Urban – Urban trees	Moderate	Precautionary assessment - once established, urban trees are expected to pass condition criteria A, B, D and F as a minimum.
Native species-rich hedgerow with 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.

Table A14.7 Watercourse Enhancement Condition Assessment Results

Habitat type	Parcel reference	Condition	Condition assessment results
Ditches	D1	Poor	Planting/management changes in the riparian zone have been targeted to reduced a riparian encroachment where possible.

Figure A14.3: Headline results

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

Land to the North of Whychurch Farm, Malmesbury
Headline Results
Scroll down for final results ⚴

Return to results menu

On-site baseline	Habitat units	26.02	
	Hedgerow units	15.12	
	Watercourse units	0.53	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	36.53	
	Hedgerow units	19.47	
	Watercourse units	0.61	
On-site net change (units & percentage)	Habitat units	10.51	40.38%
	Hedgerow units	4.35	28.77%
	Watercourse units	0.08	15.01%

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	10.51	
	Hedgerow units	4.35	
	Watercourse units	0.08	
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	10.51	
	Hedgerow units	4.35	
	Watercourse units	0.08	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	40.38%	
	Hedgerow units	28.77%	
	Watercourse units	15.01%	
Trading rules satisfied?	Yes ✓		

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	26.02	28.62	0.00
Hedgerow units	10.00%	15.12	16.63	0.00
Watercourse units	10.00%	0.53	0.58	0.00

No additional area habitat units required to meet target ✓
No additional hedgerow units required to meet target ✓
No additional watercourse units required to meet target ✓

Appendix 15: Baseline evaluation criteria

Baseline Evaluation criteria

Key evaluation categories are as follows:

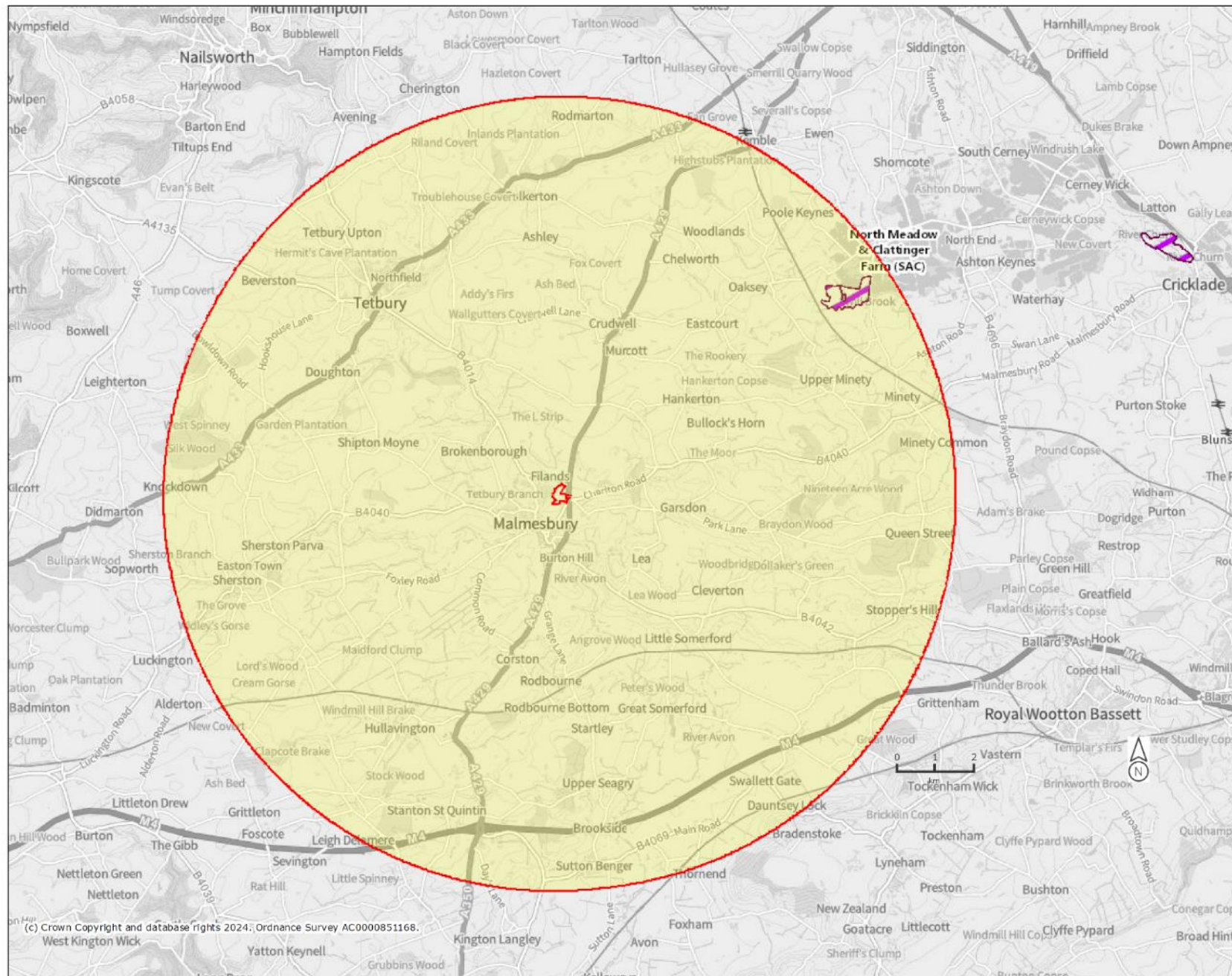
- International value (internationally designated sites, or sites meeting criteria for international designation. Sites supporting populations of internationally important species);
- UK value (sites with UK importance);
- National value (nationally designated sites (e.g. SSSIs) or sites meeting SSSI 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 16: Designated sites of nature conservation

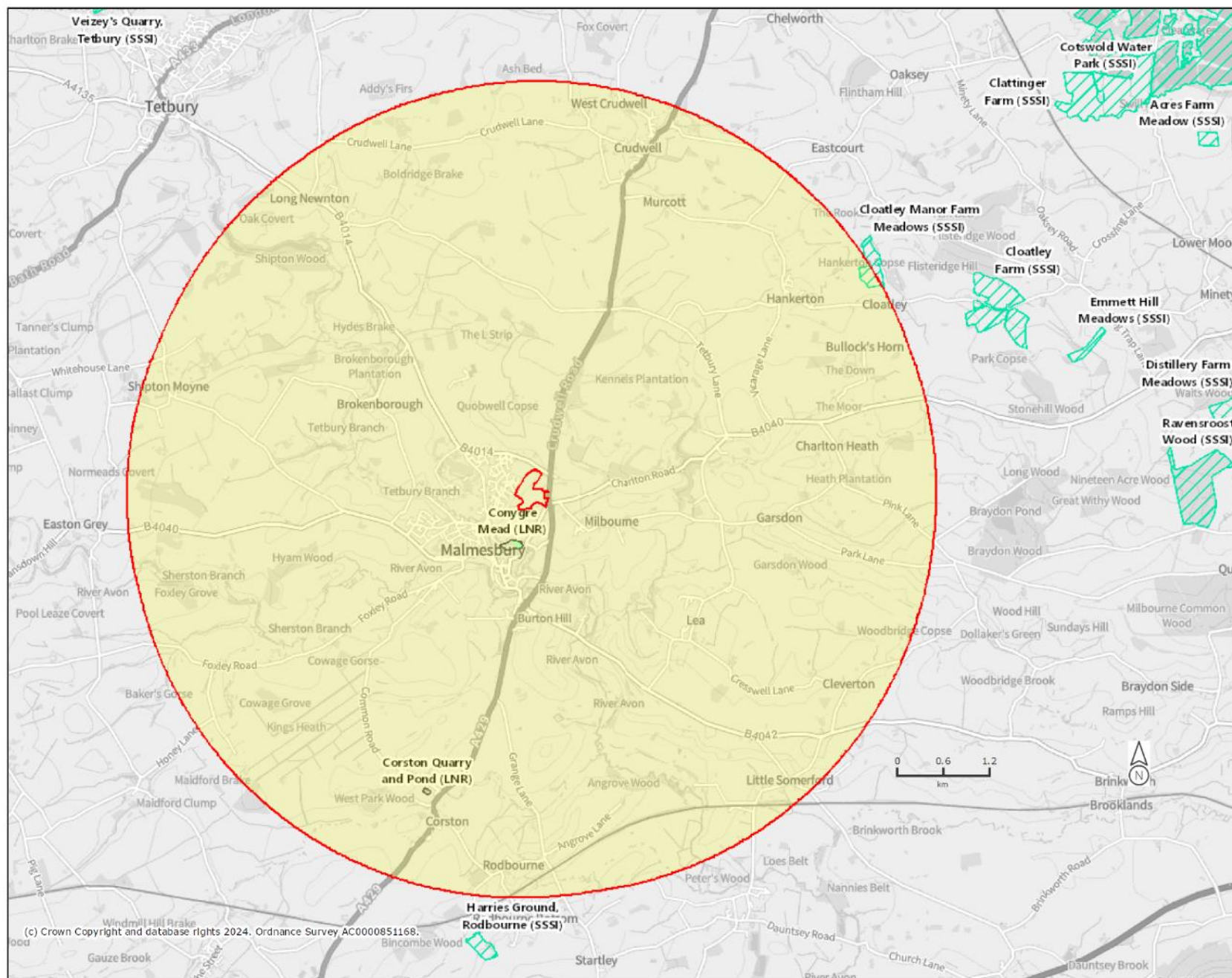
Malmesbury - European Sites within 10km



Legend

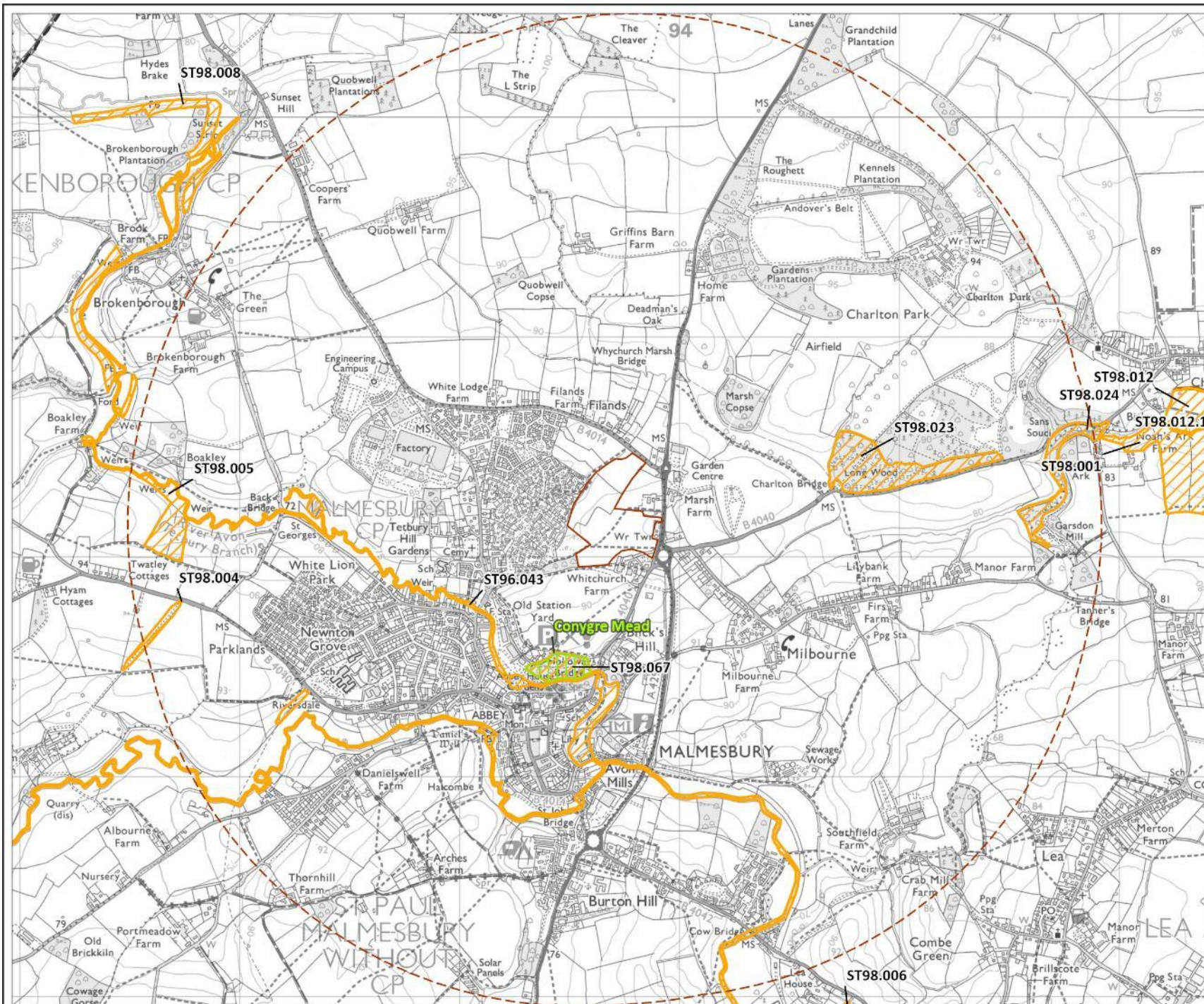
- Ramsar Sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Projection = OSGB36
xmin = 370000
ymin = 175700
xmax = 420800
ymax = 200800
Map produced by MAGiC on 22 July, 2024.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGiC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

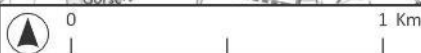


Notified Sites Within
2000 metres of
P1084 Malmesbury:
ST9368788191

Exported: 01/08/2024



- 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



Scale: 1:22,834

Table A16.1: Local Wildlife Sites (LWS) within 2km

Map Code	Grid Ref.	Site Name	Area (Ha)	Site Description	Main Habitat
ST96.043	ST905643	Bristol Avon River	150.76	One of the main river systems draining north-west Wiltshire.	River
ST98.004	ST91608764	Hyam Farm Meadows	1.54	Two fragments of species-rich grassland, one on the verges of a track, the other on a steep bank	Neutral grassland
ST98.005	ST917882	Park Lane Farm Meadows	4.06	Three meadows supporting unimproved species-rich neutral and calcareous grasslands beside the River Avon.	Neutral grassland/ Calcareous grassland
ST98.023	ST948884	Long Wood, Charlton Park	9.27	An ancient woodland site with semi-natural broadleaves and conifer plantation.	Mixed woodland
ST98.024	ST957884	Garsdon Mill Wood	4.34	Wet Alder woodland in low lying areas and spreads alongside the Charlton stream.	Wet woodland
ST98.067	ST935875	Conygre Mead	2.59	A small Local Nature Reserve on the outskirts of Malmesbury with wet woodland, scrub, tall-herb vegetation, riparian communities and a small area of restored calcareous grassland.	Broadleaved woodland/ Calcareous grassland



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