A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010059

6.18 Preliminary Bat Roost Assessment Verification Survey Report (Tracked)

Rule 8(1)(c)

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

May 2021

Infrastructure Planning

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The A1 in Northumberland: Morpeth to Ellingham

Development Consent Order 20[xx]

Preliminary Bat Roost Assessment Verification Survey Report (Tracked)

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CONTENTS

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

An application for a Development Consent Order (DCO) was made by Highways England (Applicant) on 07 July 2020 to the Secretary of State for Transport via the Planning Inspectorate (Inspectorate) under the Planning Act 2008 (2008 Act). If made, the DCO would grant consent for the A1 in Northumberland: Morpeth to Ellingham (Scheme). The Scheme comprises Part A (Morpeth to Felton) and Part B (Alnwick to Ellingham). This report relates to Part A only.

The original Preliminary Bat Roost Assessment (PBRA) of trees and buildings for Part A was conducted in 2016 and 2017 [**APP-233 and APP-234**]. Due to the age of the original assessment, a verification PBRA was completed in 2020 and 2021 for Part A to verify the impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** of the ES [**APP-048**]. The verification PBRA comprised an external visual assessment of buildings and a ground level visual assessment of trees and woodland in 2020, followed by an aerial tree climb and pole camera inspection of select trees in 2020/21 following a scoping exercise (as detailed in **paragraph 2.1.5**). The survey included a re-assessment of 12 buildings, 851 ~~1~~ trees and 2 woodland blocks that were assessed and attributed a roosting suitability classification in 2016/17 (**Appendix 9.7: Bat Roost Potential Survey Report 2017 Part A** of the ES **[APP-233]** and **Appendix 9.8: Bat Activity Survey Report Part A** of the ES [**APP-234**]). The survey also included an assessment of an additional 12 buildings for which access had previously been refused (referenced as B20.1 to B20.12) and an additional 133 trees and 8 woodland blocks with bat roost suitability.

Due to access constraints, a verification survey could not be completed for seven buildings previously surveyed in 2016 and for trees/woodland within several land parcels within the Survey Area. The seven buildings are retained by the Scheme and existing mitigation is in place to reduce the impacts of disturbance during construction. Measure S-B7 of the **Outline Construction Environmental Management Plan** (**Outline CEMP**) [**REP5-012 and 013**] (and as submitted at Deadline 6) ~~has been updated to~~ includes a walkover survey of areas within the Order Limits or a zone of influence (as determined by the ECoW) not surveyed in 2020 to verify the roosting suitability of trees/woodland. ~~The updated Outline CEMP is issued at Deadline 1.~~

The impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** [**APP-048**] remains valid for all buildings that either remained the same roosting classification or were downgraded as a result of the 2020 verification survey. The same applies for all trees that have either remained the same roosting classification, were downgraded as a result of the 2020 verification survey or are classified as Negligible or Low roosting suitability.

Only two of the surveyed buildings had increased in roosting suitability; B110A and B111A, increased from Low to Moderate roosting suitability. However, due to their proximity to

construction activities and existing mitigation proposed within **Chapter 9: Biodiversity Part A** [**APP-048**], the impact assessment in relation to roosting bats and buildings B110A and B111A remains the same and valid.

The 2020 ground level survey identified 267 trees that were previously surveyed in 2016/17 and have increased in suitability to Moderate or High, or were additional trees recorded in 2020 that were classified as Moderate or High roosting suitability that will either be felled or subject to high levels of disturbance during construction. An aerial climb and pole camera inspection of each tree survey was undertaken in October 2020 and February 2021, where accessible and safe to do so, to investigate the roosting suitability of the trees further. This survey was also extended to an additional four trees (T51A, T54A, T56A and T131A) for which access was not achieved in 2020 for a verification dusk emergence/dawn re-entry. Full details are presented within the **Bat Activity 2020 Verification Survey Report Part A** [**REP1-016**].

Access was not achieved for two trees tree (T20.17 and T131A) and therefore the trees remain of Moderate roosting suitability, as previously assessed. A further 20 trees were downgraded from High to Moderate roosting suitability or maintained a Moderate roosting suitability classification following the assessment (T2A, T29A, T44A, T53A, T54A, T55A, T56A, T68A, T105A, T20.9, T20.52, T20.57, T20.58, T20.77, T20.97, T20.107, T20.122, T20.123, T20.132 and T20.135). Measure S-B7 of the **Outline CEMP** [**REP5-012 and 013**] (as updated at Deadline 6) has been updated to confirm that the 212 trees with Moderate roosting suitability would be subject to further survey (dusk emergence/dawn re-entry surveys) pre-construction, to confirm the presence/likely absence of roosting bats. Six trees (T51A, T108A, T109A, T110A, T111A and T20.76) were downgraded from Moderate to Low roosting suitability and will be subject to a pre-fell inspection in accordance with S-B7 of the **Outline CEMP** [**REP5-012 and 013**] (and as submitted at Deadline 6). Two trees (T20.72 and T20.73) were downgraded from Moderate to Negligible roosting suitability and therefore no further survey or mitigation is required.

~~Further survey is proposed for these 27 individual trees. At the time of this report, the Applicant is arranging access for the completion of a climb and inspect survey during the winter/spring of 2020/21 as an alternative survey method to support the verification survey. If this further survey is not possible, existing mitigation would ensure that pre-commencement surveys are undertaken. This is detailed and secured within measure S-B7 of the **Outline Construction Environmental Management Plan (CEMP)** [**APP-346**].~~

Existing mitigation detailed within **Chapter 9: Biodiversity Part A** [**APP-048**] is considered appropriate for the remaining buildings, trees and woodland, including those surveyed in 2020 that were not previously surveyed in 2016/17. Where required, existing precautionary working methods to reduce levels of disturbance during construction shall be employed. ~~An updated Outline CEMP referencing applicable buildings, trees and woodland is issued at Deadline 1.~~

1 INTRODUCTION

1.1 SCHEME BACKGROUND

1.1.1. An application for a Development Consent Order (DCO) was made by Highways England (Applicant) on 07 July 2020 to the Secretary of State for Transport via the Planning Inspectorate (Inspectorate) under the Planning Act 2008 (2008 Act). If made, the DCO would grant consent for the A1 in Northumberland: Morpeth to Ellingham (Scheme). The Scheme comprises:

a. Part A: Morpeth to Felton (Part A): located on the A1 between Warrener's House Interchange at Morpeth and the existing dual carriageway at Felton. It is approximately 12.6 km in length.
b. Part B: Alnwick to Ellingham (Part B) starting approximately 15 km north of the northern extent of Part A, located along the A1 between Alnwick and Ellingham and approximately 8 km in length.

1.1.2. A detailed description of the Scheme as a whole can be found in **Chapter 2: The Scheme** of the Environmental Statement (ES) [**APP-037**].

1.1.3. The original Preliminary Bat Roost Assessment (PBRA) of trees and buildings for Part A was conducted in 2016 and 2017 [**APP-233 and APP-234**]. Due to the age of the original assessment, a verification PBRA was completed in 2020 and 2021 for Part A to verify the impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** of the ES [**APP-048**]. The verification surveys detailed within this report were specific to Part A and did not include an assessment of Part B. A PBRA for Part B was completed in March 2019 (**Appendix 9.5: Bat Report Part B** [**APP-302**]) and therefore data remains current and the ecological impact assessment presented in **Chapter 9: Biodiversity Part B** [**APP-049**] remains valid. Natural England confirmed during a meeting on 15 December 2020 that the ecological surveys undertaken to date for the Scheme, including those for Part B, were appropriate, including methodologies, timing and extent. This is documented within the Natural England Statement of Common Ground.

1.1.4. The verification PBRA was completed in respect of accessible buildings, trees and woodland blocks encompassed within the Order Limits of Part A plus 100 m, hereafter identified as the 'Survey Area' (**Figure 1**), which were last assessed in 2016/17.

1.2 ECOLOGICAL BACKGROUND

1.2.1. In 2016, a PBRA was undertaken for trees and buildings within 100 m of Part A (**Appendix 9.7: Bat Roost Potential Survey Report 2017** of the ES [**APP-233**], referred to as Section A in the appendix) to determine the likelihood of trees/buildings to support roosting bats.

1.2.2. In 2017, bat activity surveys (dusk emergence/dawn re-entry) were undertaken for trees/buildings previously identified to determine the presence/likely absence of roosting bats (**Appendix 9.8: Bat Activity Survey Report Part A** of the ES [**APP-234**]). Bat roosts

were recorded in three buildings/structures (B4A, B84A and B86A) and four trees (T220A, T136A and two separate roosts in bat boxes on the two trees identified as T147A).

1.2.3. In order to address access limitations during the 2016/17 surveys, external PBRAs were conducted for three buildings and 24 trees/tree groups in 2018 as well as dusk emergence/dawn re-entry surveys of five building/structures and one group of trees (**Appendix 9.9: Bat Survey Report 2018 Part A** of the ES [**APP-235**]).

1.2.4. A single verification bat activity survey (dusk emergence or dawn re-entry) was undertaken in 2020 of each of the buildings and trees previously surveyed in 2017 within the Survey Area (where accessible), which may be impacted by Part A. The results of this assessment are covered separately in another report; **Bat Activity 2020 Verification Survey Report Part A** [**REP1-016**] ~~(Document Reference: 6.19)~~ (**Ref. 1**). Access for the 2020 verification bat activity survey was not achieved for four trees (T51A, T54A, T56A and T131A). An aerial climb and pole camera inspection survey has been undertaken, where accessible and safe to do so, to investigate the roosting suitability of the trees further, as detailed within this report.

1.3 BRIEF AND OBJECTIVES

1.3.1. The Applicant commissioned a PBRA survey comprising an external inspection of buildings and ground level visual assessment of trees within the Survey Area last surveyed in 2016/17 that may be impacted by Part A. In addition, an aerial tree climb and pole camera inspection survey was commissioned for selective trees that may be impacted by the Scheme, identified following a scoping exercise (as detailed in **paragraph 2.1.5**). The aim of the survey was to determine the suitability of the buildings and trees to support roosting bats. The brief was to verify the results against the impact assessment and mitigation, documented in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**]. In the event of recorded changes to baseline conditions, including additional buildings or trees with bat roosting suitability, appropriate recommendations for further survey, mitigation and compensation would be provided (as required).

1.3.2. Buildings and trees surveyed in 2018 were not included as part of the survey as their assessment is considered current and therefore the impact assessment and mitigation presented within **Chapter 9: Biodiversity Part A** of the ES [**APP-048**] is considered valid (refer to **paragraph 1.3.4** below). Survey results for buildings and trees surveyed in 2018 are presented in **Appendix 9.9: Bat Survey Report 2018 Part A** of the ES [**APP-235**] and are not discussed further within this report.

1.3.3. The results of the verification survey and a comparison to the previous survey results are presented within this report.

1.3.4. The scope of the verification survey was discussed with Natural England, who confirmed in an email dated 30 June 2020 that "*given that more or less all the surveys [discussing the ecological surveys in general] are less than three years old they would be considered to be valid and thus the scope of the verification surveys would appear to be appropriate*

particularly since there has not been any significant change in land use since the original surveys were undertaken." This consultation ~~will be~~is documented within the Natural England Statement of Common Ground.

2 METHODS

2.1 PRELIMINARY BAT ROOST ASSESSMENT – BUILDINGS AND TREES

2.1.1. The verification PBRA survey initially comprised a visual, ground level assessment of buildings, trees and woodland using the same methodology as the surveys undertaken between 2016 and 2018. This was followed by a selective aerial tree climb and pole camera inspection (as detailed in **paragraph 2.1.5** below). Building inspections comprised an exterior inspection only. Woodland blocks were assessed as a whole (further detail presented in **Table 1-1** below).

GROUND LEVEL ASSESSMENT

~~2.1.1.~~2.1.2. Binoculars and a high-powered torch (1 million candle power) were used to search for Potential Roost Features (PRF) that may provide roosting opportunities for bats. Where suitable features were noted, their location and a brief description of their character was recorded. Additionally, each feature was visually inspected for evidence indicating use by roosting bats such as droppings, urine staining, and scratch marks/characteristic staining (from fur oils).

~~2.1.2.~~2.1.3. Buildings, trees and woodlands were categorised in line with the descriptions in **Table 1-1** below based on PRF present and the location of the building/tree/woodland taking into consideration the context of the surrounding habitats. The descriptions of **Table 1-1** below accord with good practice guidelines (**Ref. 2**). In accordance with the methodology of the 2016/17 assessment (paragraph 3.2.2 of **Appendix 9.7: Bat Roost Potential Survey Report 2017** of the ES [**APP-233**]), trees and woodland which were determined to have Negligible roosting suitability were discounted and are not reported. For clarity and comparison to the previous data set, those trees that were downgraded to Negligible roosting suitability during the 2020 assessment are still reported, although not considered an ecological constraint with regards to roosting bats.

~~2.1.3.~~2.1.4. The locations of assessed buildings, trees and woodland are presented in **Figure 2-1** to **2-12**.

Table 1-1 - Roost Potential Categorisation

Category	Description
Confirmed	Building/tree with features confirmed to be used by roosting bats either by historic records (verified appropriately) or evidence recorded during survey.
High	Building/tree with one or more potential roost sites which are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Category	Description
Moderate	Building/tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
Low	A building with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats. A tree of sufficient size and age to contain PRF but with none seen from the ground or features seen with only very limited roosting potential.
Negligible	Building/tree with no potential opportunities for roosting bats, or very few or minor features in an isolated/unsuitable location such that the presence of a roost is considered highly improbable. e.g. isolated from suitable foraging or commuting habitats.
Woodland categorisation	Woodlands were attributed a suitability categorisation based on the trees they contained with features conforming to the above descriptions. Where woodlands were considered to be uniform throughout these were uniformly classified. If individual trees of a woodland differed from the general uniform classification, these were identified individually but a single classification attributed to the woodland as a whole (based on the highest suitability of the majority of trees).

AERIAL CLIMB AND POLE CAMERA INSPECTION

2.1.5. A scoping exercise was undertaken following the ground level assessment to identify trees for further inspection. The scoping exercise identified trees within the Order Limits or a zone of influence (in relation to potential disturbance) that had increased in roosting suitability to Moderate or High (since the 2016/17 survey) or were additional trees recorded in 2020 with Moderate or High roosting suitability and would either be felled or subject to high levels of disturbance during construction. The scoping exercise identified 26 trees that met this criteria (T2A, T29A, T44A, T53A, T55A, T68A, T105A, T108A, T109A, T110A, T111A, T20.9, T20.17, T20.52, T20.57, T20.58, T20.72, T20.73, T20.76, T20.77, T20.97, T20.107, T20.122, T20.123, T20.132 and T20.135). The aerial climb and pole camera inspection survey was also extended to an additional four trees (T51A, T54A, T56A and T131A) for which access was not achieved in 2020 for a verification dusk emergence/dawn re-entry. Further details of the verification surveys are presented within the **Bat Activity 2020 Verification Survey Report Part A [REP1-016]**.

2.1.6. Aerial inspections were completed using an endoscope and high-powered torch. The character, profile and suitability of PRFs to support a bat roost were recorded for all aerially

inspected features, alongside the presence (or otherwise) of bats or evidence of bat use/occupancy. Where a tree could not be climbed due to health and safety concerns, a PoleKam (camera on an extendable pole) was used to assess PRFs. Trees were categorised in line with the descriptions in **Table 1-1** above.

2.2 DATES OF SURVEY

2.2.1. The external building inspections and ground-level tree assessments were completed between May and July 2020 by an experienced bat surveyor with a Natural England Class 2 survey licence (2015-16155-CLS-CLS) or an accredited agent working under the authority of the class licenced ecologist.

~~2.2.1.~~2.2.2. The aerial climb and pole camera inspection surveys were completed between 14 and 16 October 2020 and 22 and 24 February 2021. The surveys were led by an experienced bat surveyor with a Natural England Class 4 survey licence (2019-38801-CLS-CLS) and undertaken by qualified tree climbers.

2.3 NOTES AND LIMITATIONS

2.3.1. Land within 100 m of the proposed de-trunked section of the existing A1 carriageway and the unnamed road to be used as an access route from Felton (northern end of Part A) was not included within the Survey Area as impacts of the Scheme during both construction and operation would be restricted to trivial disturbance only. These areas are shown on **Figures 2-1** to **2-12**. The mitigation outlined in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**] is considered suitable and sufficient without the need for further assessment.

2.3.2. Access was refused to buildings B5A, B6A, B7A, B9A, B11A, B12A and B14A at High Highlaws Farm (grid reference: NZ 18153 89661). All seven buildings were recorded as Negligible roosting suitability in 2016 and it is assumed that this classification has not changed. All seven buildings are retained by the Scheme but may be subject to temporary disturbance during construction. Building B8A, which supports a bat roost and shall also be retained, is located adjacent to the seven buildings. Existing mitigation relating to building B8A (see EM009 of Table 9-23, **Chapter 9: Biodiversity Part A** of the ES [**APP-048**]) is in place to reduce the impacts of disturbance during construction. Given their proximity to B8A, the impact assessment and mitigation detailed in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**] are considered valid for buildings B5A, B6A, B7A, B9A, B11A, B12A and B14A. These seven buildings are not considered further within this report.

2.3.3. Access was refused to a number of land parcels within the Survey Area, shown on **Figures 2-1** to **2-12**, preventing an assessment of associated trees/woodland. Where access was limited, it has been assumed for the purpose of this assessment that there has been no change to the roost suitability of associated trees since the 2016/17 assessment (detailed in **Appendix 9.7: Bat Roost Potential Survey Report 2017** of the ES [**APP-233**] and **Appendix 9.8: Bat Activity Survey Report Part A** of the ES [**APP-234**]). This limitation has been considered within **Section 4 Discussion and Evaluation** of this report.

2.3.4. Due to health and safety constraints, the ground level assessment for boundary trees along roads ~~were~~ was completed ~~assessed~~ from adjacent land parcels outside the highway boundary and/or via a drive-by.

2.3.5. The ~~PBRA~~ ground level assessment of trees was undertaken between June and July when trees were in full leaf. High levels of vegetation/leaf cover have the potential to obscure PRF during ground-level inspection. Vegetation/leaf cover on the majority of trees within the Survey Area did not limit the assessment. Instances where vegetation may have obscured PRF were recorded in the field and considered when categorising trees and making recommendations for further survey effort or mitigation.

2.3.6. Tree T36A discussed within **Appendix 9.7: Bat Roost Potential Survey Report 2017** of the ES [**APP-233**] and **Appendix 9.8: Bat Activity Survey Report Part A** of the ES [**APP-234**] comprised two trees, which are described separately within this report (referenced as T36A and T36.2A).

2.3.7. Access was not permitted for the aerial climb and pole camera inspection of two trees (T20.17 and T131A), both of which would be lost to the Scheme. As such, it has been assumed for the purpose of this assessment that these trees remain of Moderate roosting suitability in accordance with the 2016/17 assessment and 2020 ground level verification survey (see **Appendix A**). An aerial climb and inspect survey was completed for four trees (T20.9, T20.76, T20.77 and T51A). The remainder of accessible trees were subject to a pole camera assessment due to unsafe climbing conditions (such as unsafe anchor points for climbing equipment or hollow/damaged stem or limbs of the tree). These limitations have been considered within **Section 4 Discussion and Evaluation** of this report and appropriate recommendations made.

~~2.3.6.~~2.3.8. The limitations outlined above are not considered to have negatively impacted the conclusions or recommendations made within this report.

3 RESULTS

3.1 GROUND LEVEL ASSESSMENT

~~3.1~~ OVERVIEW

3.1.1. In total, 24 buildings, 214 trees and tree groups and 10 woodland blocks with bat roost suitability were recorded.

3.1.2. The survey included a re-assessment of 12 buildings, 81 trees and 2 woodland blocks that were assessed and attributed a roosting suitability classification in 2016/17 (**Appendix 9.7: Bat Roost Potential Survey Report 2017** of the ES [**APP-233**] and **Appendix 9.8: Bat Activity Survey Report Part A** of the ES [**APP-234**]). The survey also included an assessment of an additional 12 buildings for which access had previously been refused (referenced as B20.1 to B20.12) and an additional 133 trees and 8 woodland blocks with bat roost suitability. The additional trees/woodland blocks were likely recorded as Negligible roosting suitability during the 2016/17 survey and therefore not included within the 2016/17 report (see paragraph 3.2.2 of **Appendix 9.7: Bat Roost Potential Survey Report 2017** of the ES [**APP-233**]). However, as a result of PRF developing since the 2016/17 assessment or due to the growth of the trees since the 2016/17 assessment (as a tree/woodland of sufficient size or age to contain PRF but with none seen from the ground is classified as Low roosting suitability, **Table 1**), the trees/woodland are included within the results of this report.

~~3.2~~ BUILDINGS

3.1.3. Of the 12 buildings previously surveyed in 2016/17, four buildings (B104A, B106A, B110A and B111A) were re-categorised in 2020, as summarised in **Table 3-1.** Twelve new buildings were surveyed in 2020 and a summary of their roosting suitability category is detailed in **Table 3-2** below. All new buildings were located outside the Order Limits.

3.1.4. Details of all buildings surveyed, their respective roosting suitability classification and, where appropriate, a comparison to the findings of the 2016/17 survey are presented in **Appendix A**. The suitability of buildings in **Appendix A,** which are not listed in **Table 3-1** and **3-2** below, remains the same. The locations of all buildings surveyed are detailed in **Figure 2-1** to **2-12**.

Table 3-1 – Building PBRA – 2020 Verification Survey Results that have Changed since 2016/17

Building Reference	Building Location	2016/17 Category	2020 Category
B104A	NZ 17222 98684	Moderate	Low

Building Reference	Building Location	2016/17 Category	2020 Category
B106A	NZ 17189 98677	Moderate	Low
B110A	NZ 18960 94783	Low	Moderate
B111A	NZ 18924 94732	Low	Moderate

Table 3-2 – Building PBRA – 2020 Survey Results for New Buildings

Bat Roost Potential	Buildings
Negligible	B20.3, B20.4, B20.7
Low	B20.2, B20.5, B20.8, B20.9
Moderate	B20.1, B20.6
High	B20.10, B20.11, B20.12

~~3.3~~ TREES AND WOODLAND

3.1.5. Of the 81 trees or tree groups previously surveyed in 2016/17, 30 trees were re-categorised in 2020, as summarised in **Table 3-3** below. Eighteen trees have increased in suitability and 12 have reduced in their suitability.

3.1.6. An additional 133 trees with bat roosting suitability were recorded within the Survey Area in 2020. A summary of the roosting suitability of these trees and whether they fall within the Order Limits or the wider Survey Area is outlined in **Table 3-4** below.

3.1.7. The two woodlands identified with bat roost suitability in 2016/17 (T35A and T158A) are located outside the Order Limits and maintain a Low bat roosting suitability. An additional 8 woodlands with bat roost suitability were classified within the Survey Area in 2020. Of these, four are located within the Order Limits and were all of Low roosting suitability. **Table 3-5** below summarises the suitability categories for woodlands assessed.

3.1.8. Details of all trees and woodlands surveyed, their respective roosting suitability classification and, where appropriate, a comparison to the findings of the 2016/17 survey are presented in **Appendix A**. The suitability of trees in **Appendix A,** that are not listed in **Tables 3-3, 3-4** and **3-5** below, remains the same. The locations of all trees surveyed are detailed in **Figure 2-1** to **2-12**.

Table 3-3 - Tree PBRA – 2020 Verification Survey Results that have Changed Since 2016/17

Tree Reference	Tree Location	2016/17 Roost Suitability Category	2020 Roost Suitability Category
T1A	NZ1817288250	Low	Negligible
T2A	NZ1815088663	Negligible	Moderate
T29A	NZ1856191467	Low	Moderate
T36.2A	NZ1821092310	Low	Moderate
T41A	NZ1821492424	Low	Negligible
T42A	NZ1821592438	Low	Moderate
T43A	NZ1821692465	Low	Negligible
T44A	NZ1821692490	Low	Moderate
T45A	NZ1822092509	Moderate	High
T46A	NZ1821392517	Low	Negligible
T47A	NZ1821792523	Low	Negligible
T52A	NZ1813992516	Low	Negligible
T53A	NZ1816692520	Negligible	Moderate
T55A	NZ1825692557	Low	Moderate

Tree Reference	Tree Location	2016/17 Roost Suitability Category	2020 Roost Suitability Category
T57A	NZ1855892593	Low	Negligible
T64A	NZ1849592679	Low	Negligible
T67A	NZ1883193150	Low	Moderate
T68A	NZ1838993454	Negligible	Moderate
T69A	NZ1847693515	Negligible	Moderate
T72A	NZ1887693484	Low	Negligible
T74A	NZ1889693478	Low	Moderate
T85A	NZ1862294140	Low	Negligible
T108A	NZ1857495177	Low	Moderate
T110A	NZ1856995183	Low	Moderate
T111A	NZ1862295204	Low	Moderate
T115A	NZ1850595781	Moderate	High
T130A	NZ1839796851	Low	Negligible
T144A	NZ1748599414	Low	High
T203A	NZ1844192631	Moderate	High

Tree Reference	Tree Location	2016/17 Roost Suitability Category	2020 Roost Suitability Category
T207A	NZ1847992609	High	Moderate

Table 3-4 – Tree PBRA – 2020 Survey Results for New Trees

Roost Suitability Categorisation	Within the Order Limits or on the boundary	Outside Order Limits but within Survey Area
Low	41	23
Moderate	21	26
High	11	11

Table 3-5 – Woodland PBRA – 2020 Survey Summary

Roost Suitability Categorisation	Within the Order Limits	Outside Order Limits but within Survey Area
Low	W20.3, W20.4, W20.5, W20.6	T35A. T158A. W20.1, W20.8
Moderate	-	W20.2, W20.7

3.2 AERIAL CLIMB AND POLE CAMERA INSPECTION

3.2.1. Of the 30 trees surveyed, eight trees were downgraded in their roosting suitability classification from Moderate/High to either Negligible or Low roosting suitability. Four trees were downgraded from High to Moderate roosting suitability (T105A, T20.9, T20.97 and T20.132). The remainder of trees were classified as Moderate roosting suitability. The roost suitability categorisation following the aerial climb and pole camera inspection is summarised in **Table 3-6** below.

3.2.2. Details of the trees surveyed, their respective roosting suitability classification and, where appropriate, a comparison to the findings of the 2016/17 survey and 2020 ground level verification survey are presented in **Appendix A**. The locations of all trees surveyed are detailed in **Figure 2-1** to **2-12**.

Table 3-6 - Aerial climb and pole camera inspect survey results summary

Roost Suitability Categorisation	Tree Reference
Negligible	T20.72, T20.73
Low	T51A, T108A, T109A, T110A, T111A, T20.76
Moderate	T2A, T29A, T44A, T53A, T54A, T55A, T56A, T68A, T105A, T131A, T20.9, T20.17, T20.52, T20.57, T20.58, T20.77, T20.97, T20.107, T20.122, T20.123, T20.132, T20.135

4 DISCUSSION AND EVALUATION

4.1 BUILDINGS

4.1.1. Of the twelve buildings surveyed in 2016/17, the roosting suitability classification had changed for only four buildings. Buildings B110A and B111A had increased from Low to Moderate roosting suitability. Buildings B104A and B106A had decreased from Moderate to Low roosting suitability. All other buildings previously surveyed in 2016/17 and subject to a verification survey (as summarised in **Appendix A**) remained the same roosting classification.

4.1.2. For all buildings that have either remained the same roosting classification or were downgraded as a result of the 2020 verification survey, the impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** [**APP-048**] remains valid.

4.1.3. In relation to buildings B110A and B111A, both buildings will be retained. The buildings are over 100 m from active construction works and therefore unlikely to be subject to high levels of disturbance (noise, light, visual) during construction. Nevertheless, existing mitigation, detailed within **Chapter 9: Biodiversity Part A** [**APP-048**], includes the implementation of measures to reduce the impacts of disturbance during construction, such as a suitable lighting design (if required) during construction (see EM005 of Table 9-23 [**APP-048**]) and works during daylight hours or consideration of appropriate mitigation for night working (see EM023 of Table 9-23 [**APP-048**]). Due to their proximity to construction activities and the existing mitigation proposed, the impact assessment in relation to roosting bats and buildings B110A and B111A remains the same and valid.

4.1.4. In relation to the 12 new buildings assessed in 2020, all are located outside of the Order Limits and are therefore retained. Buildings B20.3, B20.4, B20.7 had Negligible roosting suitability and are therefore not considered further. Due to their distance from construction activities and the presence of buffering habitats (such as trees/woodland/other buildings), disturbance (noise, light, visual) to buildings B20.1, B20.5, B20.10, B20.11 and B20.12 is predicted to be negligible. It is considered that the current mitigation detailed in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**], as referenced in **paragraph 4.1.3** above, is sufficient to reduce the disturbance impacts and no further survey or mitigation is proposed.

4.1.5. Buildings B20.2, B20.6, B20.8 and B20.9 are located adjacent or in close proximity to construction and may therefore be subject to temporary disturbance (noise, light, visual) during construction. These buildings were of Low or Moderate roosting suitability, meaning it is unlikely that they would support a roost of high significance (such as a maternity roost). The four buildings ~~shall be~~are included within mitigation ~~measure EM009 of Table 9-23 of **Chapter 9: Biodiversity Part A** of the ES [**APP-048**], which is translated into~~ measure A-B24 in the **Outline Construction Environmental Management Plan (CEMP)** [**REP5-012 and 013**] (and as submitted at Deadline 6)~~[**APP-346**]~~. Precautionary working methods ~~shall~~ would be implemented during construction to reduce levels of disturbance, including restriction of activities to daylight hours and seasonal restriction of heavy disturbance (noise

and vibration) activities such as piling or intrusive ground works. ~~An updated Outline CEMP encompassing the change is issued at Deadline 1.~~

4.2 TREES AND WOODLAND

4.2.1. Existing mitigation includes a pre-commencement inspection and/or survey of all known trees with bat roosting suitability (Low, Moderate or High) that require to be pruned or felled (see S-B7 within the **Outline ~~Construction Environmental Management Plan (~~CEMP~~)~~ [**REP5-012 and 013**] (and as submitted at Deadline 6)[~~**APP-346**~~]). For all trees and woodland that have either remained the same roosting classification, were downgraded as a result of the 2020 ground level verification survey or are classified as Negligible or Low roosting suitability, the impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** [**APP-048**] remains valid.

4.2.2. Woodlands W20.2 and W20.7, which were recorded with Moderate roosting suitability are located outside of the Order Limits and therefore retained. Existing mitigation detailed in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**] remains suitable and valid.

4.2.3. In relation to those trees subject to the aerial climb and pole camera inspection, 22 trees were concluded to support Moderate roosting suitability (as detailed in **Table 3-6**). Measure S-B7 of the **Outline CEMP** [**REP5-012 and 013**] (as updated at Deadline 6) has been updated to confirm that these trees would be subject to further survey (dusk emergence/dawn re-entry surveys) to confirm the presence/likely absence of roosting bats. The surveys would be undertaken pre-construction (prior to the felling of the trees) between May and September and in accordance with good practice guidelines published by the Bat Conservation Trust. In addition, as detailed within the existing text of S-B7, "… *those trees where suitability for roosting bats remains (Moderate or High suitability), although presence of a roost has not been confirmed, should be soft-felled under ecological supervision (by the ECoW* [Ecological Clerk of Works] *(suitably experienced and licensed)). This will consist of the removal of major branches and limbs followed by section felling of the main trunk, with these lowered to the floor for inspection by the ECoW*." If the surveys identify a bat roost(s), the Applicant would liaise with Natural England and obtain a licence to permit actions that may impact the bat roost(s).

4.2.4. Five trees (T108A, T109A, T110A, T111A and T20.76) were downgraded from Moderate roosting suitability to Low roosting suitability. In accordance with best practice, these trees would be subject to a pre-fell inspection to confirm that there have been no changes in roosting suitability. This pre-fell inspection is detailed in measure S-B7 of the **Outline CEMP** [**REP5-012 and 013**] (and as submitted at Deadline 6).

4.2.5. Two of the trees (T20.72 and T20.73) were downgraded from Moderate to Negligible roosting suitability. As such, no further survey or mitigation is required.

4.2.6. The Applicant is engaging with Natural England to confirm their agreement with the approach to mitigation outlined above. At the time of writing, the Applicant is awaiting a response. Any engagement will be captured within the Statement of Common Ground.

~~For the remaining trees, a scoping exercise was undertaken to identify trees for which further survey is considered necessary. The scoping exercise identified trees within the Order Limits or a zone of influence (based on professional judgement) that will either be felled or subject to high levels of disturbance during construction.~~

~~Trees with Low or Negligible roosting suitability were discounted as, in accordance with good practice guidelines (**Ref. 2**), further survey effort is not necessary. Existing mitigation, detailed in **paragraph 4.2.1**, is considered sufficient and the assessment valid.~~

~~The scoping exercise identified 26~~7 ~~trees that were previously surveyed in 2016/17 and have increased in suitability to Moderate or High, or were additional trees recorded in 2020 that were classified as Moderate or High roosting suitability. These trees are summarised in **Table 4-1** below. Due to the increase in roosting classification or identification of a new tree with bat roosting suitability, further survey is proposed. At the time of this report, the Applicant is arranging access for the completion of a climb and inspect survey during the winter/spring of 2020/21 as an alternative survey method to support the verification survey. However, if this further survey is not possible, the existing mitigation detailed in **paragraph 4.2.1** would also ensure that pre-commencement surveys are undertaken.~~

~~4.2.2. In this instance, this would involve the completion of dusk/dawn re-entry surveys appropriate for the roosting suitability classification (two surveys for Moderate, three surveys for High (**Ref. 2**)). In the event that a pre-commencement survey identifies the presence of a bat roost, work within the area would cease, an assessment made by the Ecological Clerk of Works and Natural England contact regarding licensing requirements. Specific reference to an updated assessment of the 26~~7 ~~trees detailed in **Table 4-1** below has been included within the updated Outline CEMP, which is issued at Deadline 1.~~

~~**Table 4-1 - Trees Requiring Additional Survey**~~

~~**Trees subject to verification**~~	~~**Additional Trees**~~
~~T2A; T29A; T44A; T105A; T53A; T55A; T68A; T108A; T109A; T110A; T111A; T105A~~	~~T20.9; T20.17; T20.52; T20.57; T20.58; T20.72; T20.73; T20.76; T20.77; T20.97; T20.107; T20.122; T20.123; T20.132; T20.135~~

~~4.2.3.~~4.2.7. As detailed in **paragraph 2.3.3**, refusal of access to several land parcels prevented an assessment of associated trees. These areas are shown on **Figures 2-1** to **2-12**. Existing mitigation includes a pre-commencement inspection and/or survey of all known trees with bat roosting suitability (Low, Moderate or High) that require to be pruned or felled (see S-B7 within the **Outline CEMP** [**REP5-012 and 013**] (and as submitted at Deadline 6)[~~**APP-346**~~]). This measure ~~shall be~~was updated at Deadline 1 to include a walkover survey of areas within the Order Limits or a zone of influence (as determined by the ECoW) not surveyed in 2020 to verify the roosting suitability of trees. Any additional trees with bat

roosting suitability that may be subject to impacts as a result of the Scheme would also be subject to the pre-commencement inspection and/or survey. ~~The updated Outline CEMP is issued at Deadline 1.~~

5 LEGAL AND PLANNING POLICY CONTEXT

5.1 LEGAL COMPLIANCE

5.1.1. Bats and their roosts are afforded a high level of protection under the Conservation of Habitats and Species Regulations 2017 (as amended) (Habitats Regulations) (**Ref. 3**). The legislation means that it is an offence to:

a. Deliberately capture, injure or kill a wild bat;
b. Deliberately disturb wild bats; 'disturbance of animals includes in particular any disturbance which is likely:

(a) 'to impair their ability —
(i) to survive, to breed or reproduce, or to rear or nurture their young; or
(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
(b) to affect significantly the local distribution or abundance of the species to which they belong' and

c. Damage or destroy a breeding site or resting place used by this species.

5.1.2. Protection is also afforded under the Wildlife and Countryside Act 1981 (as amended) (**Ref. 4**) with respect to disturbance of animals when using places of shelter, and obstruction of access to places of shelter.

5.1.3. Due to the high level of protection afforded to bats and their habitat, mitigation for this species is governed by a strict licensing procedure administered by Natural England. A licence may be granted for the preservation of public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment, provided:

a. '*There is no satisfactory alternative*'; and
b. The proposals '*will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range*'.

5.1.4. Certain species of bats, including noctule, brown long-eared bat and soprano pipistrelle, are also listed as a Species of Principal Importance (SPI) for the Conservation of Biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (**Ref. 5**). Under Section 40 of the NERC Act (2006) public bodies (including the Secretary of State) have a duty to have regard for the conservation of SPI when carrying out their functions, including determining planning applications.

5.2 PLANNING POLICY COMPLIANCE

5.2.1. At the national level, the Scheme is governed by the National Policy Statement for National Networks (NPS NN) (2014) (**Ref. 6**). The NPS NN states that: "*as a general principle, … development should avoid significant harm to biodiversity … conservation interests, including through mitigation and consideration of reasonable alternatives… Where*

significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought". In addition, the National Planning Policy Framework (2019) (NPPF) (**Ref. 7**) forms the basis for planning system decisions with respect to conserving and enhancing the natural environment, including bats; the ODPM circular 06/2005 (**Ref. 8**) (referenced within the NPS NN) also provides supplementary guidance, including confirmation that '*the presence of a protected species is a material consideration when a planning authority is considering a development proposal'*.

5.2.2. The NPPF additionally sets out how, at an overview level, '*planning policies and decisions should contribute to and enhance the natural and local environment by:*

> *…recognising … the wider benefits from natural capital and ecosystem services; and minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures…*'

5.2.3. A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF and includes the following:

> '*if significant harm resulting from a development cannot be avoided…adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; and*
> *opportunities to incorporate biodiversity improvements in and around developments should be encouraged …*'

5.2.4. In addition to the legislative provision described above, planning policy at the local level is informed by the following:

a. Northumberland County Council (NCC) Consolidated Planning Policy Framework May 2019 (**Ref. 9**)
b. Northumberland Local Plan – Draft Plan for Regulation 18 Consultation (**Ref. 10**)
c. Northumberland Local Biodiversity Action Plan (LBAP) (**Ref. 11**)

5.2.5. Under the Northumberland Consolidated Planning Policy Framework, the Former Castle Morpeth District Local Plan (**Ref. 12**) is applicable to Part A.

5.2.6. Full details of the local planning policies relevant to Part A are detailed in **Table 9-3** of **Chapter 9: Biodiversity Part A** [**APP-048**].

5.2.7. Certain species of bats which are also priority species in the UK Biodiversity Action Plan (UKBAP), are listed as Species of Principal Importance in Section 41 of the NERC Act 2006 and are also listed in the Northumberland BAP[1]. These species include soprano and common pipistrelle which have both been recorded during baseline surveys Part A.

[1] https://www.nwt.org.uk/sites/default/files/2018-10/Nland_Biodiversity_Action_Plan.pdf

5.2.8. Mitigation, compensation and enhancement measures are recommended in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**] to enable the Scheme to be compliant with the above legislation and planning policy. These measures shall be secured through the Outline CEMP, which shall be updated to capture additional mitigation to address the findings of the 2020 verification surveys.

6 CONCLUSION

6.1.1. The original PBRAs of trees and buildings for Part A was conducted between 2016 and 2017 [**APP-233** and **APP-234**]. Due to the age of the original assessment, a verification PBRA was completed in 2020 for Part A. The survey aimed to verify the impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** of the ES [**APP-048**].

6.1.2. The verification PBRA comprised a walkover of the Survey Area to undertake an external inspection of buildings and ground level assessment of trees last surveyed in 2016/17 that may be impacted by Part A. Following the ground level assessment of trees, a scoping exercise was completed and select trees were subject to an aerial tree climb and pole camera inspection (as detailed in **paragraph 2.1.5**). The survey included a re-assessment of 12 buildings, 851 ~~1~~ trees and 2 woodland blocks that were assessed and attributed a roosting suitability classification in 2016/17 (**Appendix 9.7: Bat Roost Potential Survey Report 2017** of the ES **[APP-233]** and **Appendix 9.8: Bat Activity Survey Report Part A** of the ES [**APP-234**]). The survey also included an assessment of an additional 12 buildings for which access had previously been refused (referenced as B20.1 to B20.12) and an additional 133 trees and 8 woodland blocks with bat roost suitability.

6.1.3. Due to access constraints, a verification survey could not be completed for seven buildings previously surveyed in 2016: B5A, B6A, B7A, B9A, B11A, B12A and B14A. All seven buildings were recorded as Negligible roosting suitability in 2016 and it is assumed that this classification has not changed. The seven buildings are retained by the Scheme and existing mitigation is in place to reduce the impacts of disturbance during construction (A-B24 of the **Outline CEMP** [**REP5-012 and 013** ~~**APP-346**~~] (and as submitted at Deadline 6)). As such, the impact assessment and mitigation detailed in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**] are considered valid for buildings B5A, B6A, B7A, B9A, B11A, B12A and B14A.

6.1.4. For all buildings that either remained the same roosting classification or were downgraded as a result of the 2020 verification survey, the impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** [**APP-048**] remains valid.

6.1.5. Buildings B110A and B111A had increased from Low to Moderate roosting suitability but are retained within the Scheme. Due to their distance from construction activities and the presence of buffering habitats (such as trees/woodland/other buildings), disturbance (noise, light, visual) to buildings B110A, B111A as well as B20.1, B20.5, B20.10, B20.11 and B20.12 is predicted to be negligible. It is considered that the current mitigation detailed in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**], as referenced in **paragraph 4.1.3** above, is sufficient to reduce the disturbance impacts and no further survey or mitigation is proposed. Buildings B20.3, B20.4, B20.7 had Negligible roosting suitability and are therefore not considered further.

6.1.6. Buildings B20.2, B20.6, B20.8 and B20.9 are located adjacent or in close proximity to construction and may therefore be subject to temporary disturbance (noise, light, visual)

during construction. Precautionary working methods are proposed during construction to reduce levels of disturbance, including restriction of activities to daylight hours and seasonal restriction of heavy disturbance (noise and vibration) activities such as piling or intrusive ground works (measure A-B24 of the **Outline CEMP** [**REP5-012 and 013**] (and as submitted at Deadline 6)). ~~An updated Outline CEMP that includes precautionary working methods for the four buildings within A-B24 is issued at Deadline 1.~~

6.1.7. Access was refused to a number of land parcels within the Survey Area, shown on **Figures 2-1** to **2-12**, preventing an assessment of associated trees/woodland. Existing mitigation (S-B7 within the **Outline CEMP** [**REP5-012 and 013**] (and as submitted at Deadline 6)[~~**APP-346**~~]) ~~has been~~ was updated at Deadline 1 to include a walkover survey of areas within the Order Limits or a zone of influence (as determined by the ECoW) not surveyed in 2020 to verify the roosting suitability of trees. ~~The updated Outline CEMP is issued at Deadline 1.~~

6.1.8. Existing mitigation includes a pre-commencement inspection and/or survey of all known trees with bat roosting suitability (Low, Moderate or High) that require to be pruned or felled (see S-B7 within the **Outline CEMP** [**REP5-012 and 013**] (and as submitted at Deadline 6)[~~**APP-346**~~]). For all trees that have either remained the same roosting classification, were downgraded as a result of the 2020 verification survey or are classified as Negligible or Low roosting suitability, the impact assessment and mitigation detailed within **Chapter 9: Biodiversity Part A** [**APP-048**] remains valid.

6.1.9. Woodlands W20.2 and W20.7 with Moderate roosting suitability are located outside of the Order Limits and therefore retained. Existing mitigation detailed in **Chapter 9: Biodiversity Part A** of the ES [**APP-048**] remains suitable and valid.

6.1.10. In relation to those trees subject to the aerial climb and pole camera inspection, 22 trees were concluded to support Moderate roosting suitability (as detailed in **Table 3-6**). Measure S-B7 of the **Outline CEMP** [**REP5-012 and 013**] (as updated at Deadline 6) has been updated to confirm that these trees would be subject to further survey (dusk emergence/dawn re-entry surveys) pre-construction, to confirm the presence/likely absence of roosting bats. Six trees (T51A, T108A, T109A, T110A, T111A and T20.76) were downgraded from Moderate roosting suitability to Low roosting suitability. In accordance with best practice, these trees would be subject to a pre-fell inspection to confirm that there have been no changes in roosting suitability. This pre-fell inspection is detailed in measure S-B7 of the **Outline CEMP** [**REP5-012 and 013**] (and as submitted at Deadline 6). Two of the trees (T20.72 and T20.73) were downgraded from Moderate to Negligible roosting suitability. As such, no further survey or mitigation is required.

6.1.11. The Applicant is engaging with Natural England to confirm their agreement with the approach to mitigation. At the time of writing, the Applicant is awaiting a response. Any engagement will be captured within the Statement of Common Ground.

~~6.1.9.~~

~~Further survey is proposed for 27 individual trees, which would be felled or subject to higher levels of disturbance during construction. At the time of this report, the Applicant is arranging access for the completion of a climb and inspect survey during the winter/spring of 2020/21 as an alternative survey method to support the verification survey. If this further survey is not possible, existing mitigation would ensure that pre-commencement surveys are undertaken. Specific reference to an updated assessment of the 27 trees has been included within S-B7 of the updated Outline CEMP, which is issued at Deadline 1.~~

REFERENCES

Ref. 1 WSP (2020). Bat Roost Verification Survey Report - Buildings and Trees. WSP UK.

Ref. 2 Collins, J (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Ref. 3 HMSO (2017). The Conservation of Habitats and Species Regulations (as amended) (the Habitat Regulations).

Ref. 4 Her Majesty's Stationary Office (HMSO) (1981). Wildlife and Countryside Act (as amended by the Countryside and Rights of Way Act 2000).

Ref. 5 HMSO (2006). Natural Environment and Rural Communities Act.

Ref. 6 Department for Transport (2014). National Policy Statement for National Networks. Department for Transport, London.

Ref. 7 Ministry of Housing, Communities and Local Government (2019). National Planning Policy Framework. Ministry of Housing, Communities and Local Government, London.

Ref. 8 HMSO (2005). Biodiversity and Geological Conservation – Statutory Obligations and Their Impact Within the Planning System. Office of the Deputy Prime Minister (ODPM) Circular 06/2005 HMSO, Norwich.

Ref. 9 Northumberland County Council (2019). Northumberland Consolidated Planning Policy Framework. Version 27, May 2019.

Ref. 10 Northumberland County Council (2019). Northumberland Local Plan – Draft Plan for Regulation 19 Consultation. January 2019.

Ref. 11 Northumberland Wildlife Trust (NWT). http://www.nwt.org.uk/northumberland-BAP [Accessed 01 September 2020]

Ref. 12 Former Castle Morpeth Borough Council (2003). Castle Morpeth District Local Plan, 1991 – 2006. Adopted February 27th, 2003, Published July 2003. 9.

N

Key

- Order Limits
- Study Area (100m buffer)

Longframlington
Felton
West Thirston
East Thirston
B6345
Togston
Broomhill
B1330
South Broomhill
Hadston
Red Row
B6344
Weldon
Eshott
West Chevington
Burgham
A1
Widdrington
A1068
Longhorsley
A697
Guyzance
Park Bridge
Earsdon
Stobswood
Widdrington Station
Tritlington
Ulgham
Fenrother
Stanton
Longhirst
Pigdon
A197
B1337
Fair Moor
Pegswood

0 1000 2000 3000 4000 5000 6000 Metres

highways england

Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 1 – SITE LOCATION AND SURVEY AREA

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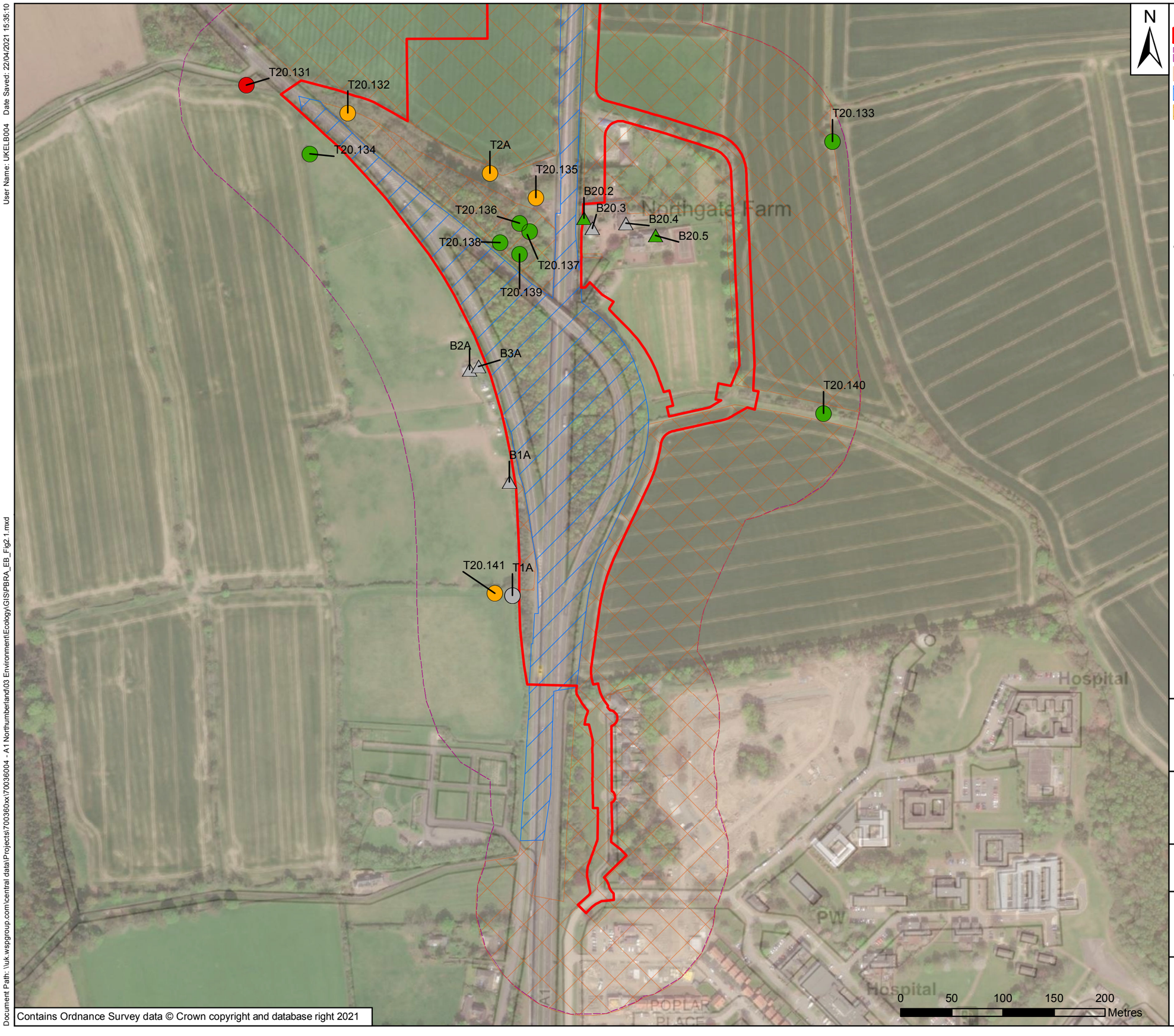

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N

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

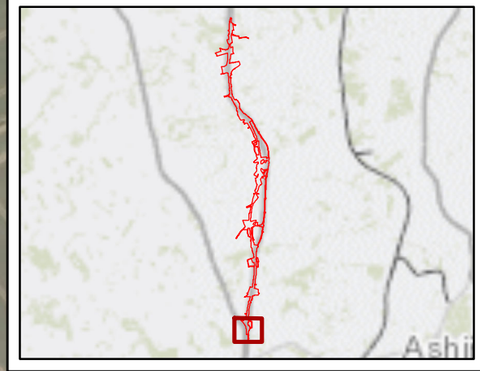
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



highways england

Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-1 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

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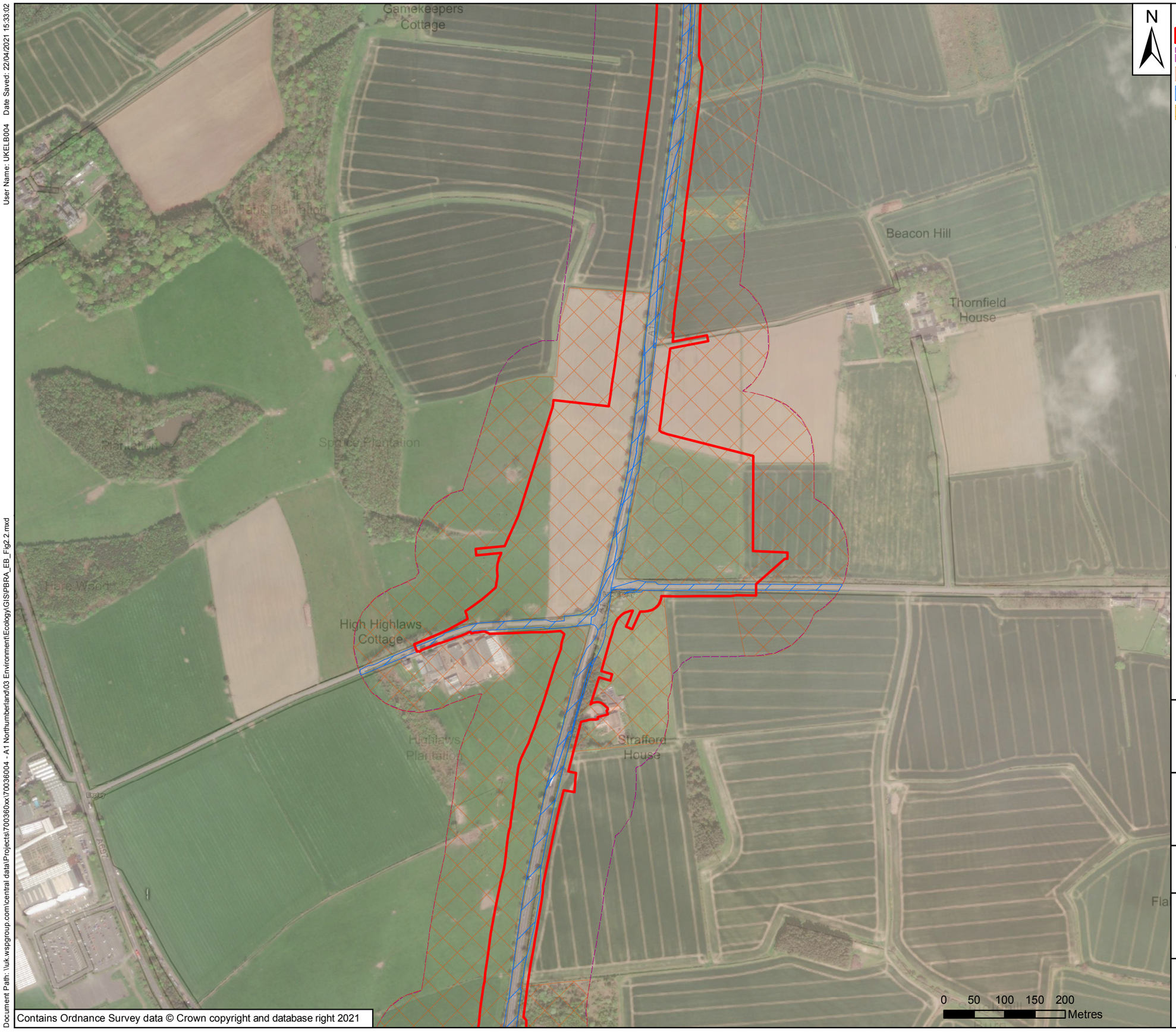

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N

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

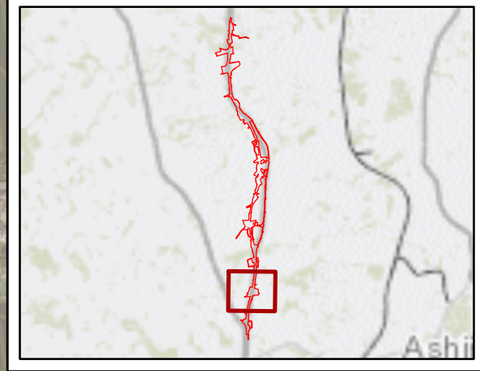
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



highways england

Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-2 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

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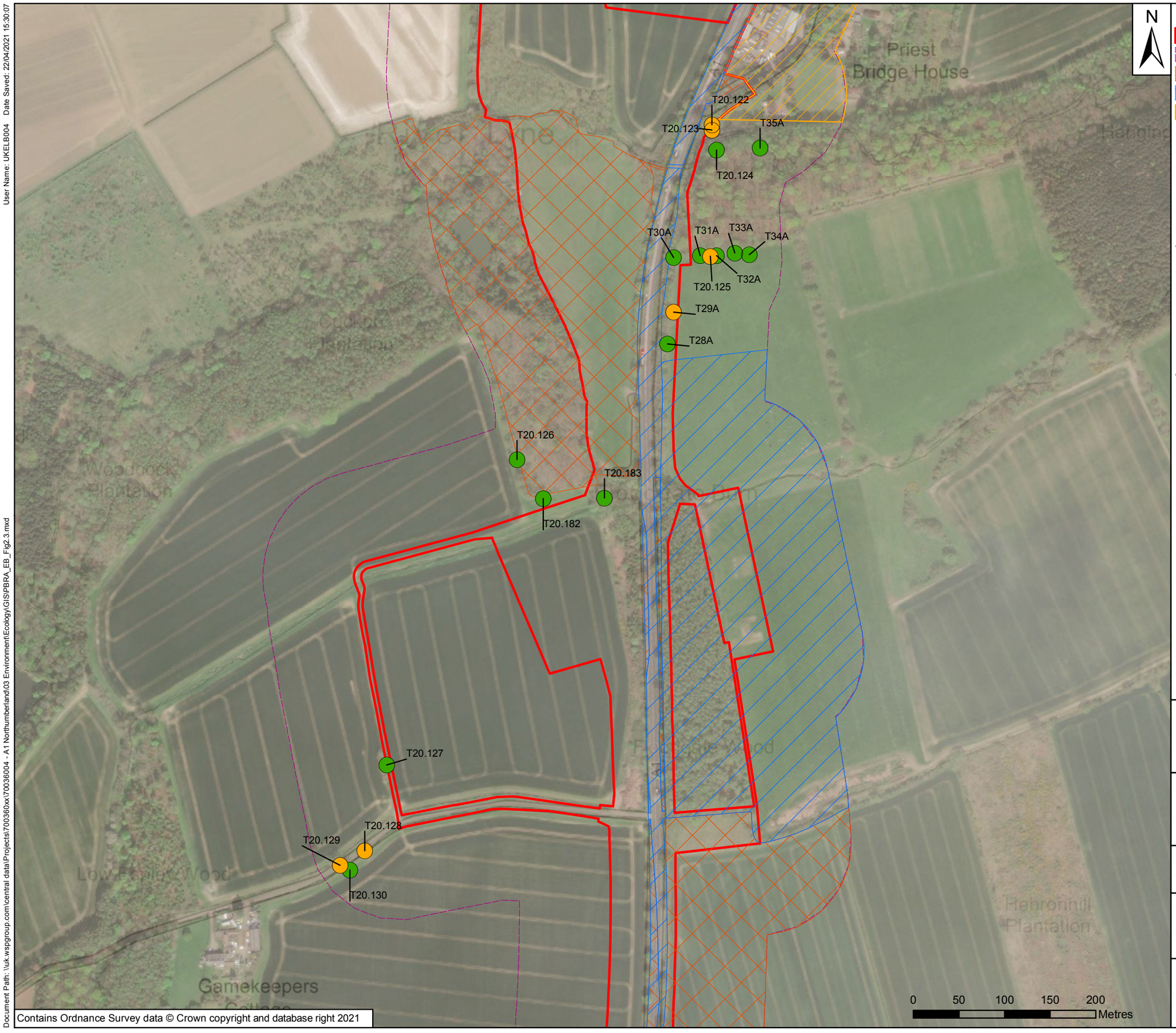


N

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

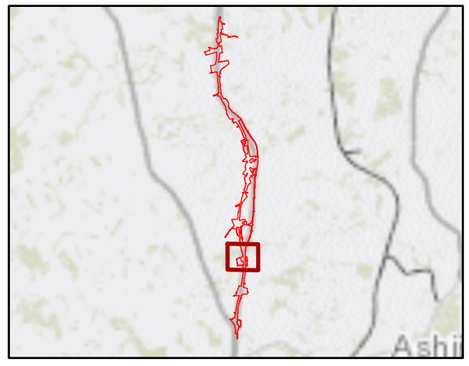
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-3 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.3	Drawn:	EB
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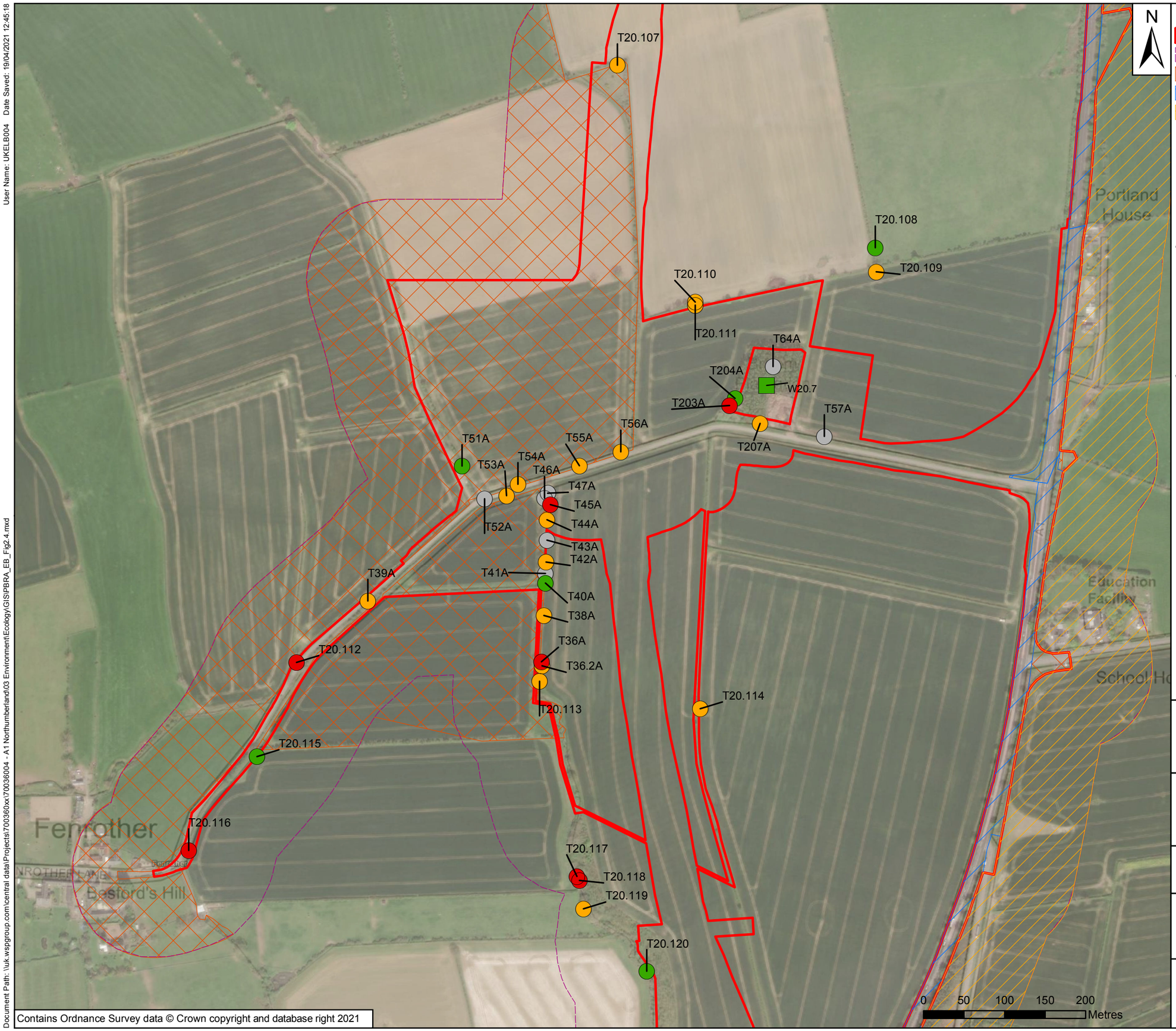

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Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

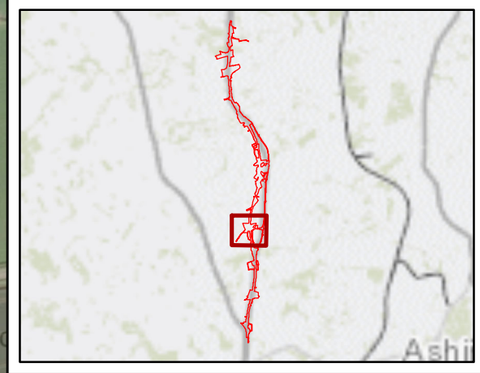
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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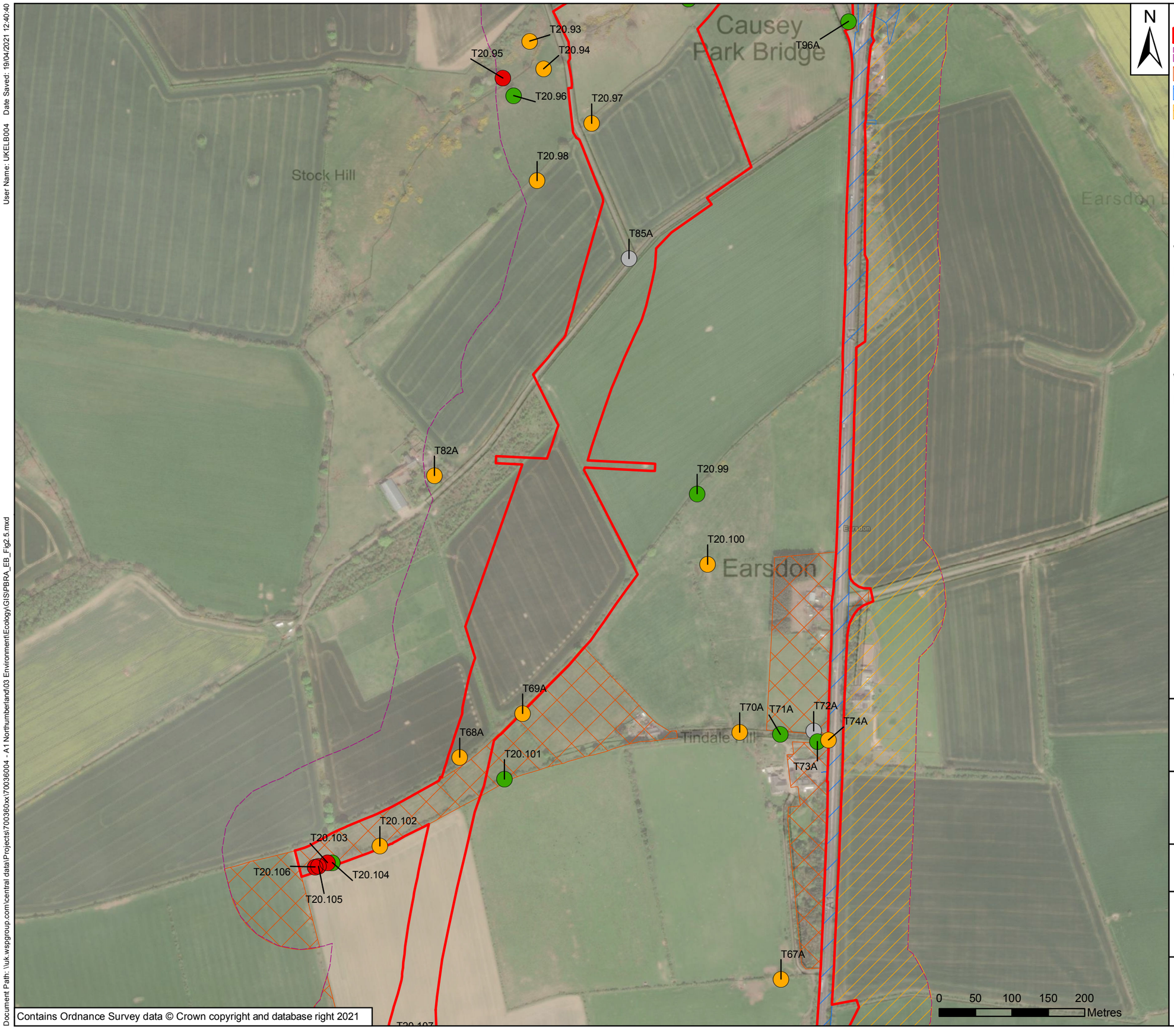
Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-4 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.4	Drawn:	EB
Date:	22/04/2021	Checked:	JF
Scale:	4,500 @ A3	Approved:	DC



N

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

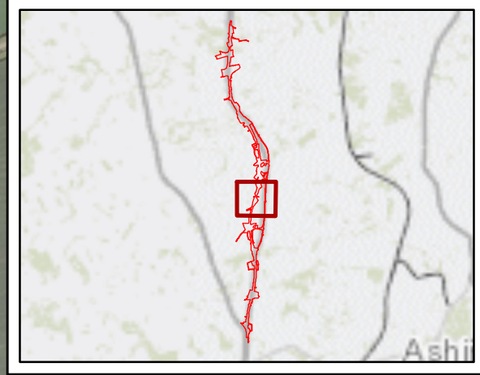
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-5 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.5	Drawn:	EB
Date:	22/04/2021	Checked:	JF
Scale:	5,000 @ A3	Approved:	DC

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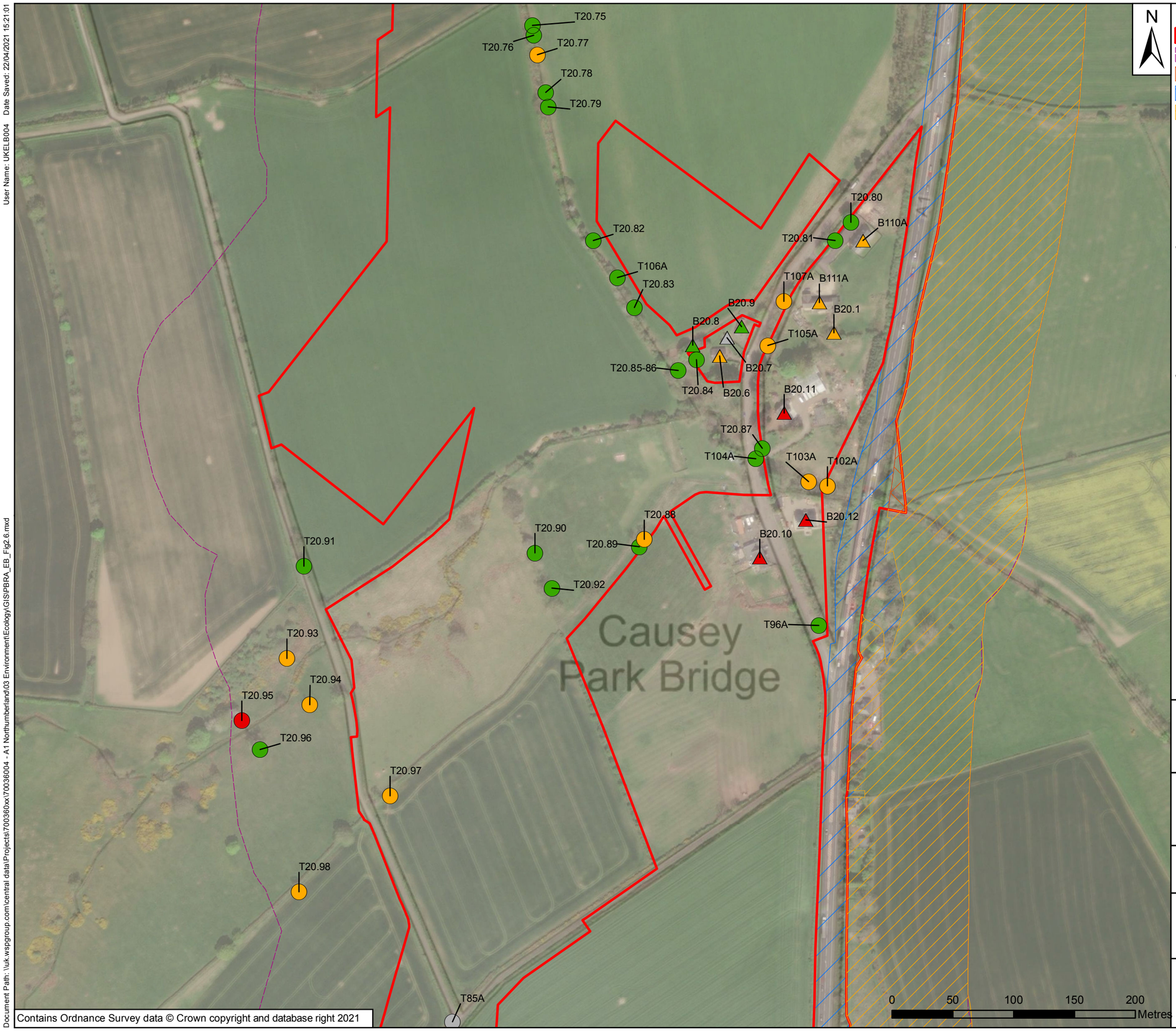

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate

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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-6 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.6	Drawn:	EB
Date:	22/04/2021	Checked:	JF
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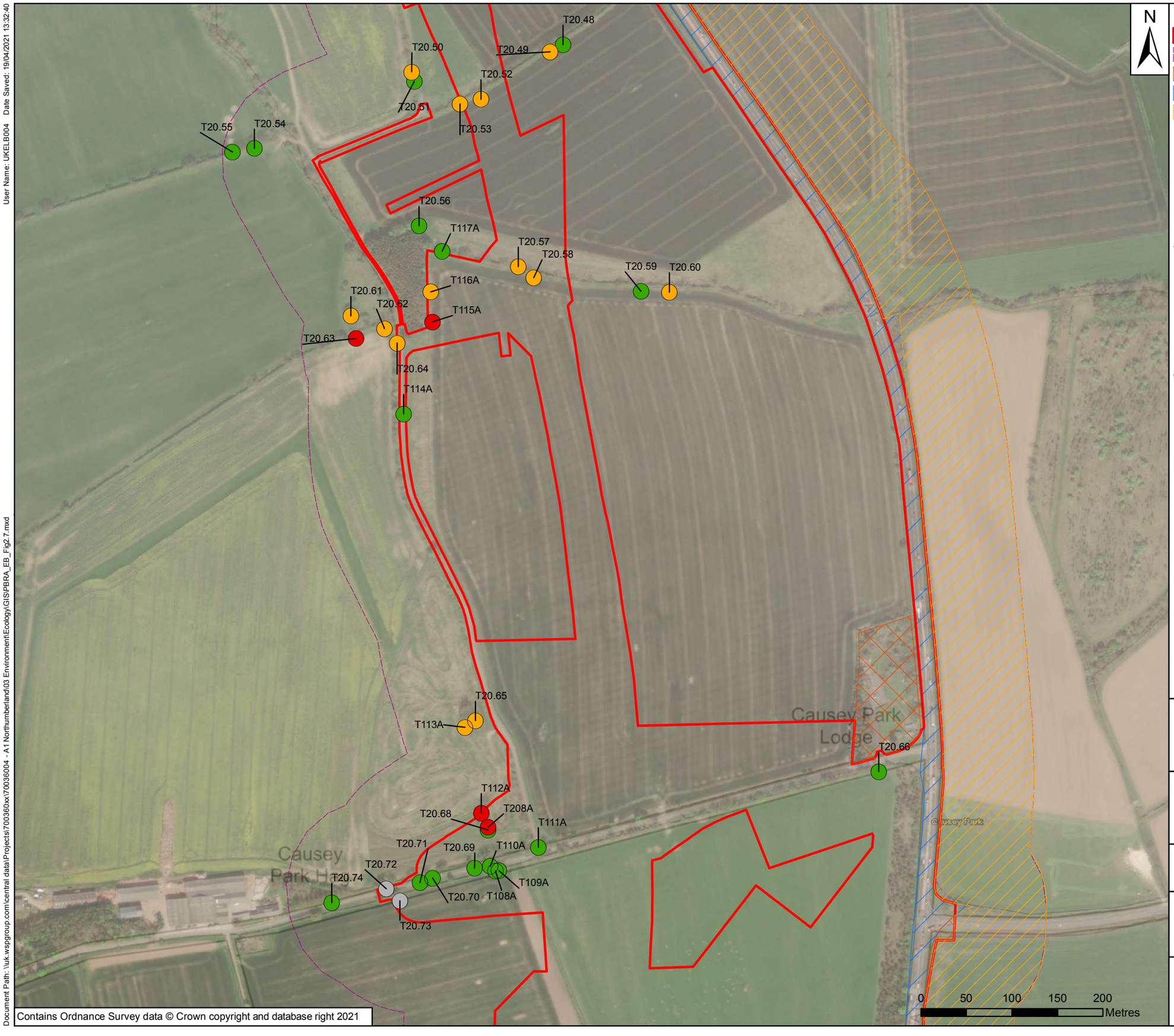

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N

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

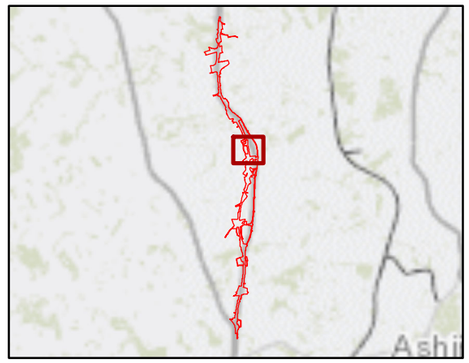
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-7 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.7	Drawn:	EB
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Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

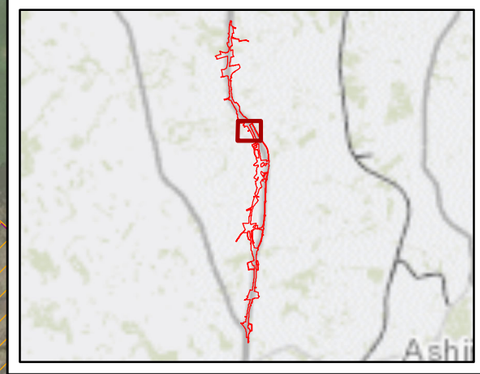
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-8 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.8	Drawn:	EB
Date:	22/04/2021	Checked:	JF
Scale:	3,000 @ A3	Approved:	DC

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N

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

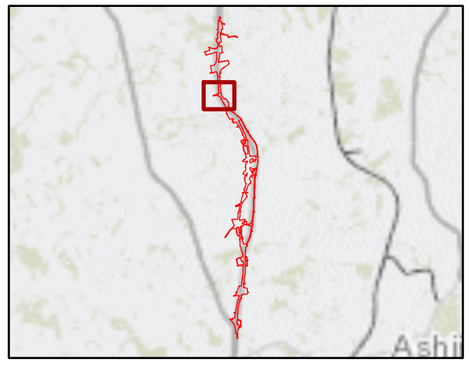
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-9 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.9	Drawn:	EB
Date:	22/04/2021	Checked:	JF
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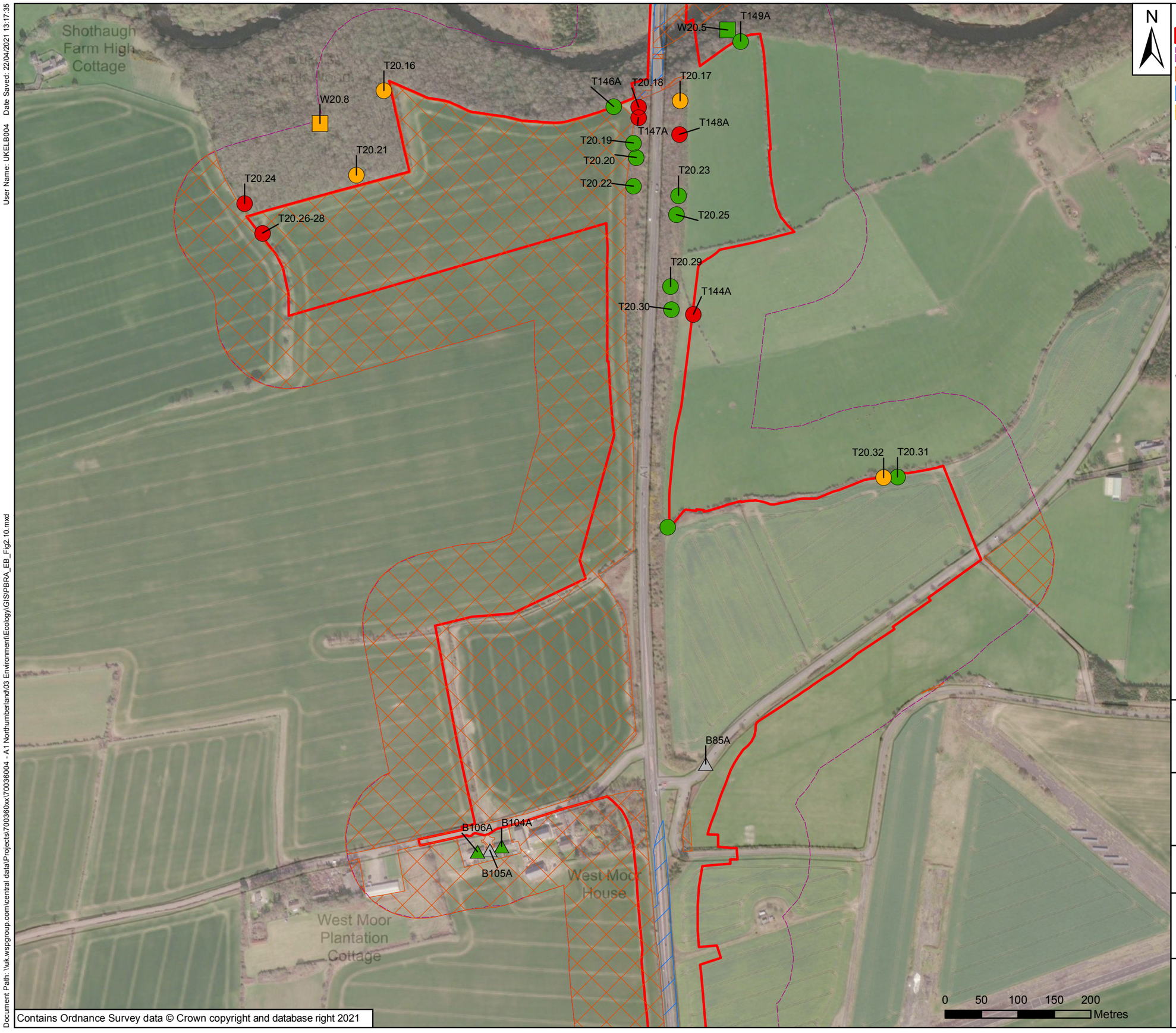

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N

Key

- Order Limits
- Study Area
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

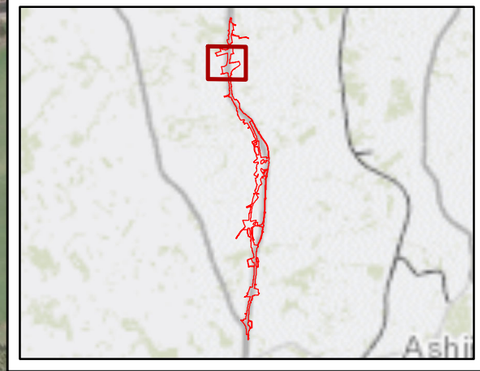
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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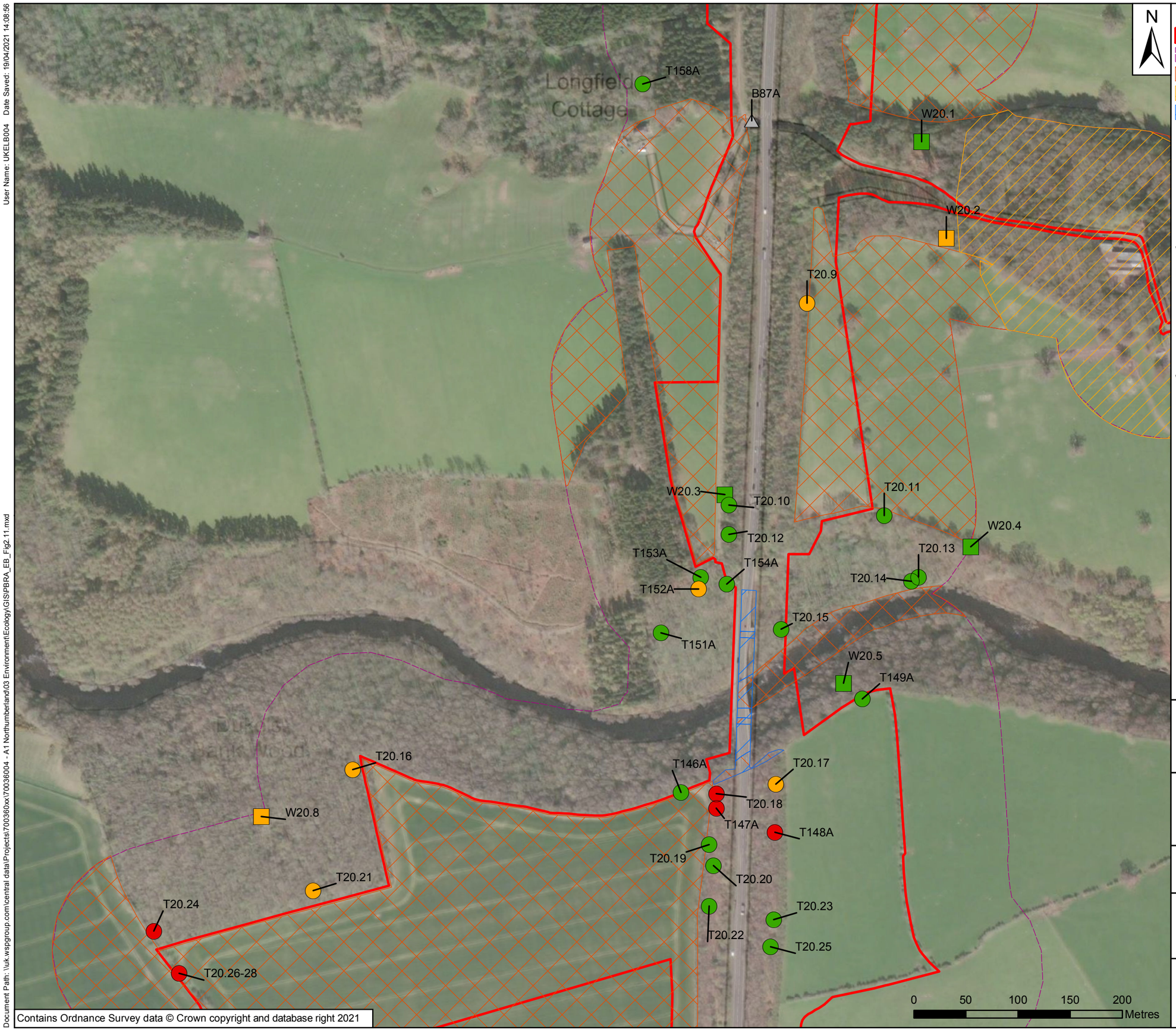
Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-10 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.10	Drawn:	EB
Date:	22/04/2021	Checked:	JF
Scale:	5,000 @ A3	Approved:	DC



N

Key

- Order Limits
- Study Area
- No Access
- Scoped out of Survey Area
- Restricted/partial access

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

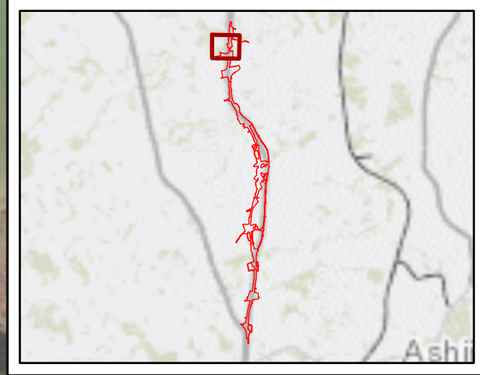
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-11 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.11	Drawn:	EB
Date:	22/04/2021	Checked:	JF
Scale:	3,500 @ A3	Approved:	DC

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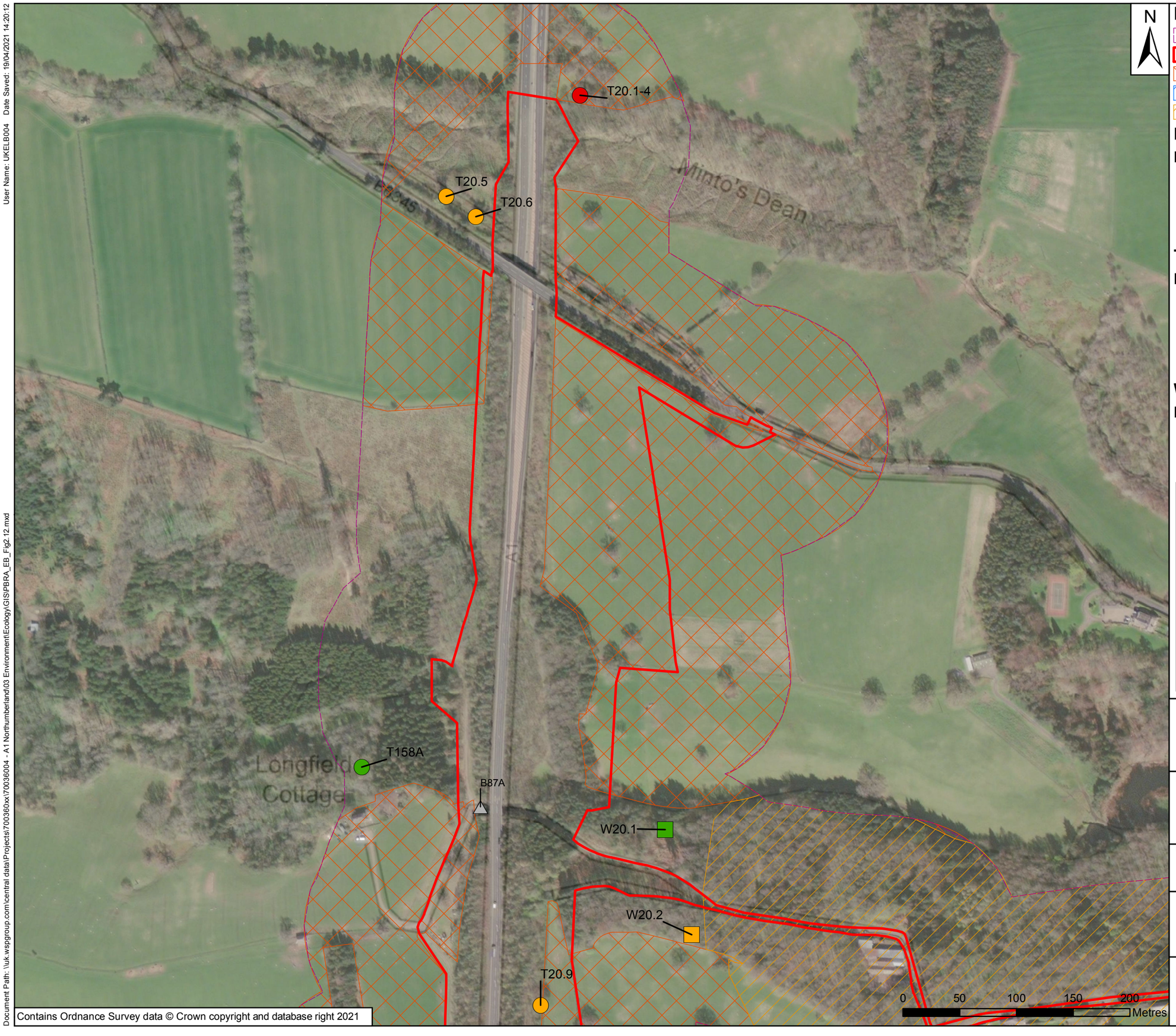


N

Key

- Study Area
- Order Limits
- No Access
- Restricted/partial access
- Scoped out of Survey Area

Buildings

Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Trees

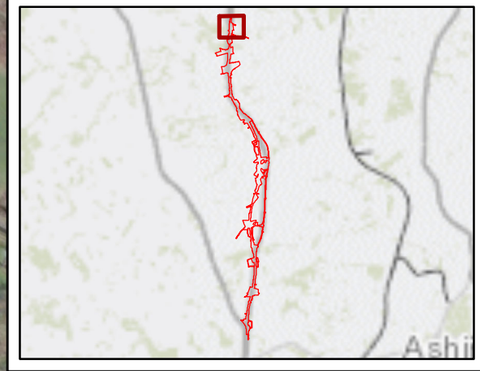
Bat Roost Suitability

- High
- Moderate
- Low
- Negligible

Woodlands

Bat Roost Suitability

- Low
- Moderate



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Client: Highways England

Project: A1 IN NORTHUMBERLAND, PART A: MORPETH TO FELTON

Title: FIGURE 2-12 - PRELIMINARY BAT ROOST ASSESSMENT - VERIFICATION SURVEY RESULTS

Drawing No:	Figure 2.12	Drawn:	EB
Date:	22/04/2021	Checked:	JF
Scale:	3,212 @ A3	Approved:	DC

Appendix A

PBRA RESULTS

Table A-1 – Building PBRA – Verification of Roosting Suitability Classification

Building Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Category	Direction of Change
B1A	NZ 18169 88361	Single-storey stable, approximately 2.5m high, 3m long and 3m wide. The building was constructed from wood with a two-pitched roof covered by a corrugated bitumen roof. The timber panelling across the structure was flush. The surrounding land was grazed pasture and hedgerows.	No PRF recorded	Negligible	Negligible	No change
B2A	NZ 18130 88471	Single-storey stable, approximately 2.5m high, 3m long and 5m wide. The building was constructed from wood with a flat corrugated metal roof. The timber panelling across the structure overlapped but did not create space suitable for roosting bats. Disused swallow nests were recorded within the structure. The surrounding land was grazed pasture and hedgerows.	No PRF recorded	Negligible	Negligible	No change
B3A	NZ 18139 88474	Single-storey stable, approximately 2.5m high, 3m long and 5m wide. The building was constructed from wood with a flat corrugated metal roof. The timber panelling across the structure overlapped but did not create space suitable for roosting bats. Swallow nests were recorded within the structure. The surrounding land was grazed pasture and hedgerows.	No PRF recorded	Negligible	Negligible	No change
B82A	NZ 17645 97797	A single-storey open-fronted stable with a single pitch roof. The building was approximately 3m tall, 11.5m long, and 3.5m wide. The stable walls were corrugated metal with some tiles at the end, whilst the roof was covered with corrugated asbestos cement. Windows were corrugated plastic with wooden frames. An airfield was located immediately north of the building and a woodland strip was located to the west.	The stable was open at the eastern aspect providing bats with access to the interior. No potential bat roost features were recorded.	Negligible	Negligible	No change
B83A	NZ 17575 97957	An open-fronted single-storey red brick log shed with a single pitch corrugated metal roof. The building was approximately 2.5m tall, 3m long, and 6m wide. The building was adjacent to a woodland strip.	Cracks were recorded in the mortar between breeze blocks and brick work, but these were closely inspected and found to be generally too	Negligible	Negligible	No change

Building Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Category	Direction of Change
			small or open to support roosting bats.			
B85A	NZ 17502 98797	Single-storey bus shelter, approximately 2m tall, 2m wide and 3m long. The building walls were made from stone-faced breeze blocks. The roof had been recently replaced; the roof was corrugated iron with wooden boarding underneath. The building had windows with wooden frames and fasciae. Hirundo nests were recorded within the structure. The building was surrounded by grazed pasture and a minor road. The A1 was approximately 70m west of the building.	No PRF recorded	Negligible	Negligible	No change
B87A	NU 17444 00344	Concrete underpass that allowed a farm track to pass under the A1. The underpass was approximately 5m tall, 12m long and 4m wide. Either side of the underpass was woodland and parkland.	No PRF recorded	Negligible	Negligible	No change
B104A	NZ 17222 98684	A block of two terraced single-storey dwellings with brick and rendered walls and double-pitched tiled roofs. The building was approximately 22 m long and 10m wide and the windows were framed by uPVC. Soffit boxes and barge boards were present and lead flashing was located around the chimneys. The surrounding land featured woodland, arable fields and hedgerows.	The roof was well sealed, small gaps were present where tile had slightly lifted	Moderate	Low	↓
B105A	NZ 17206 98679	A single-storey garage, approximately 11m long and 6m wide. The garage had brick walls and a flat felt-covered roof. The surrounding land featured woodland, arable fields and hedgerows.	No PRF recorded	Negligible	Negligible	No change
B106A	NZ 17189 98677	A block of two terraced single-storey dwellings with brick and rendered walls and two-pitched tiled roofs. The building was approximately 22m long and 10m wide and the windows were uPVC. Soffit boxes and barge boards were present, and lead flashing was located around the chimneys. The surrounding land featured woodland, arable fields and hedgerows.	The roof was well sealed, small gaps were present where tile had slightly lifted	Moderate	Low	↓
B110A	NZ 18960 94783	A two-storey semi-detached dwelling built in 2010, approximately 20m long and 10m wide.	The following PRF were recorded across the	Low	Moderate	↑

Building Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Category	Direction of Change
		The building had stone walls and the roof was double pitched with dormer windows and covered with slate. The windows were uPVC. Barge boards and soffit boxes were present and lead flashing was located around the chimney and in the joints between the roof and the dormer windows. House Martin nests were recorded under dormer windows and porches. The surrounding land featured arable and grazed fields, hedgerows and a stream.	structure. Lifted roof vent with gaps beneath. Gaps between wall and wood of dormer; gaps behind barge board; gaps under soffit; gaps behind flashing at the base of dormer hips; and gaps behind wooden baton under eaves enabling possible access below tiles.			
B111A	NZ 18924 94732	A single storey detached dwelling approximately 25m long and 13m wide. The dwelling had stone walls and a multi-pitched roof with interlocking tiles. The windows were uPVC. Additionally, a timber lean-to shed was present along the east of the structure. The surrounding land featured arable and grazed fields, hedgerows and a stream.	The following PRF were recorded across the structure: Gaps beneath cap stones; gaps behind soffit; gaps beneath lead flashing; small gaps above soffit boards; gaps behind lead flashing; mortar missing beneath tile on hip of roof; lifted tile possibly enabling access to roof.	Low	Moderate	↑

Table A-2 – Building PBRA – Additional Buildings Assessed

Building Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	Assessment of Potential to Support Bat Roosts
B20.1	NZ 18936 94707	Summer house within garden south of B111A. Timber structure with a wooden tiled roof.	Shallow enclosed void beneath the pitch of roof; possible access under eaves	Moderate
B20.2	NZ 18242 88619	Small sandstone building with slate pitched roof and flat gable ends, located to the north-west of and adjoining Warrener's Cottage. Western elevation fronts onto highway. Bare stone on northern and eastern elevations with painted render on western and southern elevations. Eastern elevation with large arched, glazed patio doors. Other three elevations solid stonework.	Gaps beneath some of the roof slates. On eastern elevation there were small gaps between boards supporting gutters but were mostly covered in cobwebs. No features on southern elevation. Western elevation had some gaps beneath guttering and some stonework was damaged at the northwest corner, creating gaps. Northern elevation had multiple gaps in stonework, including three clay pipes set into wall at roof level.	Low

Building Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	Assessment of Potential to Support Bat Roosts
B20.3	NZ 18250 88609	Pitched roof cottage with slate roof, flat gable ends and conservatory adjoining the southern elevation. From ground level slates appeared to be intact. Entire property is rendered and painted.	No obvious PRF as the render mostly adjoins boards supporting gutters. Some small gaps between board and walls at northern end of eastern elevation but cobwebs present.	Negligible
B20.4	NZ 18283 88614	These stone wall/slate roof properties appeared to have been recently built/converted with sections of new stonework, new roof, windows and doors.	No PRF recorded.	Negligible
B20.5	NZ 18312 88602	Very large recently renovated property re-roofed 18 months ago. Stone walls with pitched slate roof. Original section of the property appears to be the 2/3 storey western side with adjoining single-storey areas, built in 2009, including an indoor swimming pool at the eastern side connected to the original house by another single-storey extension, with patio area to the south.	There were few PRF except some small gaps under the eaves, where wood joins stonework of the original section of the building and possible gap next to the chimney on the eastern elevation of the original part of the house. Approx. 20-30 house martin nests were present under the eaves around the entire property. Although there were very few PRF, the owner said that a bat had entered the living room via the chimney last year.	Low
B20.6	NZ 18842 94688	Single-storey red brick and stone block structure. The gable ends of the structure were render and the roofing material has interlocking tiles. Scattered trees, a small stream, hedgerows with trees and grazing pasture surrounded the structure.	The following PRF were recorded across the structure: a lifted tile; missing mortar under ridge tile; a gap between the soffit board and wall providing possible access to the loft void.	Moderate
B20.7	NZ 18848 94703	Shipping container with wooden board cladding on east and west side. Scattered trees, a small stream, hedgerows with trees and grazing pasture surrounded the structure.	No PRF recorded.	Negligible
B20.8	NZ 18820 94697	Timber structure with corrugated roofing material. Bees were recorded beneath some section of the wooden cladding. Scattered trees, a small stream, hedgerows with trees and grazing pasture surrounded the structure.	Gaps were present under the eaves of the structure as well as gaps between the wooden cladding. Insulation behind the cladding may be a possible obstruction to bat roosting.	Low
B20.9	NZ 18860 94712	Single-storey stone block construction, with clay pan tiled roof, and a single pitch slate roof extension was present on the southwest end of the structure. Scattered trees, a small stream, hedgerows with trees and grazing pasture surrounded the structure.	The following PRF were recorded across the structure: a gap under the ridge tile allowing possible access to internal void; gaps under fiacre board. Gaps present across the structure were blocked by chicken wire and mortar.	Low
B20.10	NZ 18875 94522	A disused two-storey stone block construction with slate roof. A single-storey flat rooved section to the structure was present along the building's western extent; a conservatory was present to the south.	Numerous features suitable for roosting bat were present across the structure, including missing stone and plaster work, and gaps between roof tiles potential providing access to the internal roof void.	High

Building Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	Assessment of Potential to Support Bat Roosts
		Scattered trees, a small stream, hedgerows with trees and grazing pasture surrounded the structure.		
B20.11	NZ 18895 94641	Two-storey stone block construction with slate roof. Scattered trees, a small stream, hedgerows with trees and grazing pasture surrounded the structure.	Numerous features suitable for roosting bat were present across the structure, including missing stone and plaster work and gaps between roof tiles potential providing access to the internal roof void.	High
B20.12	NZ 18913 94553	Two-storey stone block and slate rooved structure. The structure was built within the last 3 years. Single-storey section of the structure was present to the north and south. Scattered trees, a small stream, hedgerows with trees and grazing pasture surrounded the structure.	The eaves of the single-storey sections of the structure were open. They provided access to the internal roof space. Evidence of bird nesting was recorded.	High

Table A-3 – Tree PBRA – Verification of Roosting Suitability Classification

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
T1A	NZ1817288250	Mature Ash, approximately 15m high.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓
T2A	NZ1815088663	Mature Ash, approximately 11m high.	Thick Ivy coverage which was a potential bat roost feature and could have hidden other potential features.	Negligible	Moderate	Moderate	↑
T15A	NZ1841891269	A semi-mature Oak tree approximately 10m high.	1 small split was visible.	Low	Low	-	No change
T16A	NZ1848591263	A mature Ash approximately 15m high.	Medium sized holes, splits and occasional lifted bark were observed. The tree was located on the woodland edge.	Low	Low	-	No change

[2] Direction of change is a comparison between the 2016/17 survey and the most recent survey undertaken (either 2020 ground level assessment or 2020/21 aerial climb or pole camera inspection).

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
T28A	NZ1855491432	3 semi-mature Oaks located close to the A1 approximately 9m high.	Dead limbs, splits and lifted bark were observed.	Low	Low	-	No change
T29A	NZ1856191467	3 semi-mature Oak trees, approximately 9m high	A large but open fissure was present in 1 Oak at height approximately 4.5m.	Low	Moderate	Moderate	↑
T30A	NZ1856191527	A mature Oak located on a woodland edge approximately 9m high.	Small splits and occasional holes were observed along with lifted bark in places.	Low	Low	-	No change
T31A	NZ1859091529	Two semi-mature Oaks present within a treeline. The trees were approximately 10m high.	Occasional splits and holes were present. The trees were located on the woodland edge.	Low	Low	-	No change
T32A	NZ1860891529	Two semi-mature Oaks were present within a treeline approximately 11m high.	Low numbers of small splits and holes were present; there were also small sections of lifted bark.	Low	Low	-	No change
T33A	NZ1862891532	A semi-mature Oak present in a treeline approximately 10m high.	Dead limbs, lifted bark and a small hole were observed.	Low	Low	-	No change
T34A	NZ1864491530	Two semi-mature Oaks situated in a treeline approximately 11m high.	Small splits and lifted bark observed.	Low	Low	-	No change
T36A	NZ1820992315	Mature Ash tree, approximately 9m high.	A large cavity and smaller holes were observed in the northern tree.	High	High	-	No change
T36.2A	NZ1821092310	Mature Ash trees, approximately 9m high.	A knothole was present on the western aspect at 4m on the north-western trunk. A tear-out was present on the western aspect at 10m.	Low	Moderate	-	↑
T38A	NZ1821292372	A mature Ash approximately 12m high.	Two large hollow branches; numerous holes were present and a large split.	Moderate	Moderate	-	No change
T39A	NZ1799592390	A mature Ash approximately 10m high.	A large, downward facing cavity with a small calloused hole and a split was observed. There was also a large hole at the front of tree.	Moderate	Moderate	-	No change
T40A	NZ1821492412	A semi-mature Ash approximately 11m high.	1 callous hole and a small split were observed.	Low	Low	-	No change

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
T41A	NZ1821492424	A mature Ash tree approximately 12m high.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓
T42A	NZ1821592438	A mature Ash approximately 10m high.	A small hole was observed - no access to western aspect.	Low	Moderate	-	↑
T43A	NZ1821692465	A 4-stemmed mature Ash tree approximately 12m high.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓
T44A	NZ1821692490	A mature Ash tree approximately 10m high.	A large hole was present from a fallen limb (tear-out); there were also numerous splits.	Low	Moderate	Moderate	↑
T45A	NZ1822092509	A mature Ash tree approximately 8 m high.	The tree appeared to be dying with numerous holes and splits observed.	Moderate	High	-	↑
T46A	NZ1821392517	A semi-mature Ash tree approximately 12m high.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓
T47A	NZ1821792523	A double-stemmed mature Ash tree approximately 12m high.	Previously identified PRF were not considered significant	Low	Negligible	-	↓
T51A	NZ1810592547	A mature Ash approximately 10m high.	Medium sized cavity at a height of approximately 3, and small splits present. Features do not extend back much and offer limited roosting suitability.	High	N/A	Low	↓
T52A	NZ1813992516	A semi-mature Ash approximately 8m high.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓
T53A	NZ1816692520	A semi-mature Ash approximately 6m high.	A south-facing, medium sized fissure was present, also a small hole and a medium hollow limb.	Negligible	Moderate	Moderate	↑
T54A	NZ1818092534	A semi-mature Ash tree approximately 7m high.	Hollow limb and main stem was observed with several potential entrance points.	Moderate	Moderate	Moderate	No change
T55A	NZ1825692557	A mature Ash tree of approximately 10m height.	A large hole was present, but this was quite low down. Dead limbs, splits and knotholes were also observed although tree was quite exposed.	Low	Moderate	Moderate	↑
T56A	NZ1830792574	A mature Ash approximately 12m high.	A calloused hole was observed at front of tree; however, surveyors were unable to identify from ground level whether it was	Moderate	Moderate	Moderate	No change

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
			hollow. There were also numerous knotholes. Adjacent to live road.				
T57A	NZ1855892593	A semi-mature Oak tree approximately 9m high.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓
T64A	NZ1849592679	4 similar Oaks planted closely together in predominantly Birch woodland.	Previously identified PRF were not considered as significant.	Low	Negligible	-	↓
T67A	NZ1883193150	A mature Ash tree with a height of 16m.	Two knotholes present on the central and northern trunk.	Low	Moderate	-	↑
T68A	NZ1838993454	A mature Ash tree approximately 13m high.	A knothole and numerous splits were observed.	Negligible	Moderate	Moderate	↑
T69A	NZ1847693515	A mature Ash tree with a height of 12 m.	A downward facing knothole was observed.	Negligible	Moderate	-	↑
T70A	NZ1877493489	A semi-mature Ash tree with a height of 16m.	Numerous knotholes were observed which were quite large. There was also a split limb.	Moderate	Moderate	-	No change
T71A	NZ1883093486	A semi-mature Ash tree with a height of 16m.	PRF at height could not be ruled out.	Low	Low	-	No change
T72A	NZ1887693484	An immature Ash tree with a height of 16m.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓
T73A	NZ1888193482	A mature Ash tree with a height of approximately 16m.	The tree had a split limb with some lifted bark.	Low	Low	-	No change
T74A	NZ1889693478	A mature Ash tree with a height of approximately 10m.	Small holes and a broken branch were observed.	Low	Moderate	-	↑
T82A	NZ1835593842	Semi-mature Ash tree situated in a farmhouse garden. Approximately 15m high.	Deep fissure in scaffold limb leading up to potential voids inside limb.	Moderate	Moderate	-	No change
T85A	NZ1862294140	An immature Ash tree with a height of 8m.	Previously identified PRF were not considered significant.	Low	Negligible	-	↓

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
T96A	NZ1892394466	Semi-mature Ash present in a layby, approximately 12m high.	Multi-stemmed with extensive Ivy.	Low	Low	-	No change
T102A	NZ1893094580	Mature Alder present in a tree line along a stream, approximately 15m high.	Extensive Ivy cover which could have obscured multiple features.	Moderate	Moderate	-	No change
T103A	NZ1891594584	Mature Ash present in a tree line along a stream, approximately 15m high.	Extensive Ivy cover which could have obscured multiple features.	Moderate	Moderate	-	No change
T104A	NZ1887194603	Semi-mature Silver Birch present in a private garden, approximately 12m high.	Rot pocket with void on main trunk.	Low	Low	-	No change
T105A	NZ1888194696	Ancient Sycamore present on a roadside, approximately 14m high.	Numerous rot holes and very large cavities present. Tree hollow throughout.	High	High	Moderate	↓~~No change~~
T106A	NZ1875794752	Semi-mature Oak situated within a hedgerow, approximately 9m high.	Split bark peeled back with shallow cavity on eastern aspect of stem.	Low	Low	-	No change
T107A	NZ1889494733	Ancient Ash present on a roadside, approximately 15m high.	Rot hole on western aspect of stem and holes at base of broken off branch.	Moderate	Moderate	-	No change
T108A	NZ1857495177	Mature Oak situated in a hedgerow, approximately 14m high.	Crevices present between bark and Ivy.	Low	Moderate	Low	No change↕
T109A	NZ1857895178	Ancient Oak situated in a hedgerow, approximately 14m high.	Old specimen with snagged limb ends and longitudinal fissures on some limbs, covered in Ivy.	Moderate	Moderate	Low	↓~~No change~~
T110A	NZ1856995183	Ancient Oak situated in a hedgerow, approximately 20m high.	Numerous splits and cracks which were obscured by Ivy.	Low	Moderate	Low	No change↕
T111A	NZ1862295204	Ancient Oak situated in a hedgerow, approximately 14m high.	Old specimen with snagged limb ends and longitudinal fissures on some limbs, covered in Ivy.	Low	Moderate	Low	No change↕

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
T112A	NZ1855995241	Ancient Ash situated in a field, approximately 20m high.	Numerous voids, cavities, splits and rot holes of various sizes on all aspects.	High	High	-	No change
T113A	NZ1854195335	Ancient Sycamore present on a kart track, approximately 22m high.	A rot pocket was present, and vegetation has now colonised the rot pocket.	Moderate	Moderate	-	No change
T114A	NZ1847495680	Mature Sycamore present in a hedgerow, approximately 15m high.	Rot hole on eastern aspect which potentially leads up into the stem.	Low	Low	-	No change
T115A	NZ1850595781	Ancient Sycamore present on a woodland edge, approximately 20m high.	4 rot pockets at 4 - 5m, woodpecker holes and crevices in limbs.	Moderate	High	-	↑
T116A	NZ1850395814	Mature Ash present on a woodland edge, approximately 16m high.	Frost crack leading upwards to void.	Moderate	Moderate	-	No change
T117A	NZ1851695858	Mature Ash situated in a replanted defunct hedgerow, approximately 12m high.	East-facing rot pocket at 3.5m and vertical crevice on western side leading to potential void.	Low	Low	-	No change
T126A	NZ1844496284	Twin-stemmed mature Oak situated in a hedgerow, approximately 16m high.	East-facing rot pocket at 5m.	Low	Low	-	No change
T128A	NZ1834696481	Semi-mature Ash present in a hedgerow, approximately 8-9m high.	Central cavity leading to potential void.	Moderate	Moderate	-	No change
T130A	NZ1839796851	Semi-mature Sycamore, approximately 10 m high.	Previously identified PRF were not considered to be of enough significance to constitute categorisation.	Low	Negligible	-	↓
T131A	NZ1798396879	Ancient Ash present in a roadside verge, approximately 12m high.	Densely clad with ivy but numerous splits and rot pockets on visible limbs suggested that more featured were obscured.	Moderate	Moderate	No access - Moderate	No change
T143A	NZ1745099122	Two semi-mature Ash trees, approximately 12m high.	Dense Ivy was present on both trees.	Low	Low	-	No change

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
T144A	NZ1748599414	Mature Oak, approximately 16m high.	Broken branches, split branches, knothole with a dead peg and other small knotholes present. Additionally a large hole within the trunk was present on the north-eastern aspect at 5m.	Low	High	-	↑
T146A	NZ1737699699	A semi-mature Oak tree, approximately 10 m high.	Frost crack present.	Low	Low	-	No change
T147A	NZ1741099684	Two young Ash trees, approximately 14m high.	Two bat boxes on each tree.	High	High	-	No change
T148A	NZ1746699661	Two semi-mature Beech and Ash, approximately 14m high	Two bat boxes on each tree; part of Highways England monitoring scheme.	High	High	-	No change
T149A	NZ1755099789	Two semi-mature hawthorns and 1 semi-mature Ash, between approximately 8m and 14m high.	Thick Ivy was present on each tree.	Low	Low	-	No change
T151A	NZ1735699852	Semi-mature Sycamore and Ash treeline (2 and 3, respectively), approximately 18m high.	Thick Ivy was present on each tree.	Low	Low	-	No change
T152A	NZ1739299894	Juvenile Ash, approximately 10m high.	Large tear-out of eastern side and hollow trunk.	Moderate	Moderate	-	No change
T153A	NZ1739599905	Approximately 18m high.	A knothole was present as well as broken and torn branches.	Low	Low	-	No change
T154A	NZ1741999899	Two trees; a semi-mature Ash and a semi-mature Oak, approximately 16m high.	Thick Ivy cover was present on both trees.	Low	Low	-	No change
T200A	NZ1754997729	Mature Ash, approximately 8m high.	PRF at height could not be ruled out.	Low	Low	-	No change
T201A	NZ1754897726	Mature Ash, approximately 10m high.	The trunk was hollow with a potential access point at the base of the stem.	High	High	-	No change
T202A	NZ1754897721	Mature Oak, approximately 10m high.	PRF at height could not be ruled out.	Low	Low	-	No change

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2016/17 Category	2020 Ground Level Assessment Category	2020/2021 Aerial Climb and Pole Camera Inspection Category	Direction of Change[2]
T203A	NZ1844192631	Semi-mature White Poplar, approximately 15m.	Impact shatter and dying wood hollowing present. Knotholes in dead branch. Trunk cavity on the southwestern aspect at 6m.	Moderate	High	-	↑
T204A	NZ1844892640	Semi-mature white poplar.	Two knotholes were present, one each on the east and west aspects.	Low	Low	-	No change
T207A	NZ1847992609	Semi-mature Birch.	Previously identified PRF were not considered significant.	High	Moderate	-	↓
T208A	NZ1856795226	Mature Oak, over 15m in height.	"Lightning strike" damage and tree had developed 'rams' horns' on the on the eastern aspect and peeling bark was present.	High	High	-	No change
T211A	NZ1745898042	Semi-mature Ash.	A single tear-out was present on the eastern aspect.	Moderate	Moderate	-	No change
T212A	NZ1744998038	Semi-mature Ash.	A single tear-out was present on the eastern aspect.	Moderate	Moderate	-	No change
T213A	NZ1737998027	Semi-mature Ash.	A single tear-out was present on the eastern aspect.	Moderate	Moderate	-	No change

Table A-4 – Tree PBRA – Additional Trees with Roosting Suitability

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2020 Ground Level Assessment of Potential to Support Bat Roosts	2020/2021 Aerial Climb and Pole Camera Inspection Category	Proximity to Order Limits
T20.1-4	NZ1753200972	Four mature and over mature Oak (3) and Ash (1), all of which were over 15m in height. Located at the edge of woodland - Trees not fully assessible due to access constraints.	PRF were present on all trees, which appeared to be trunk cavities and knot holes from the vantage point.	High	-	Outside
T20.5	NZ1741400883	Over mature/dead Ash tree over 15m in height, located with scrubland.	Dense Ivy coverage of the tree may conceal features of potential to roosting bats.	Moderate	-	Outside
T20.6	NZ1744000865	Over mature/dead Ash tree over 15m in height, located with scrubland.	Dense Ivy coverage of the trees may conceal features of potential to roosting bats.	Moderate	-	Outside

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2020 Ground Level Assessment of Potential to Support Bat Roosts	2020/2021 Aerial Climb and Pole Camera Inspection Category	Proximity to Order Limits
T20.9	NZ1749700169	Two mature to over-mature Horse Chestnut trees located at the edge of woodland.	Tree to the south had a tear-out on its southern aspect, although recorded as shallow. The northern tree had both a knothole on its southern aspect and a flute feature on its northern aspect.	High	Moderate	Within
T20.10	NZ1742299975	A single bird box attached to a tree within woodland.	Bird box may provide potential for roosting bats.	Low	-	Within
T20.11	NZ1757199965	Mature Oak approximately 12m in height.	Fresh cracked limb on the eastern facing aspect at approximately 3m. The wound is upward-facing reducing its potential to support roosting bats.	Low	-	Outside
T20.12	NZ1742299947	A single bird box attached to a tree within woodland.	Bird box may provide potential for roosting bats.	Low	-	Within
T20.13	NZ1760499906	Dead Sycamore, approximately 5m in height, located within woodland.	Woodpecker holes on the eastern aspect, 2.5 - 3 m in height. Features may provide access to the internal structure of the tree.	Low	-	Outside
T20.14	NZ1759799902	A single bird box attached to a Sycamore within woodland.	Bird box on the eastern aspect of the tree, at approximately 2 m . Bird box may provide potential for roosting bats.	Low	-	Outside
T20.15	NZ1747299856	Two semi-mature Sycamore. Over 15m in height.	Dense Ivy coverage of the trees, may conceal features of potential to roosting bats.	Low	-	Within
T20.16	NZ1706199721	Mature to over-mature birch tree, approximately 7m in height, located within woodland - a typical example of Birch trees within the woodland section.	Basel cavity on the northerly aspect of the tree, 30 cm-10 cm in size. The feature potentially provides access to internal structure of the tree.	Moderate	-	Outside
T20.17	NZ1746799707	Semi-Mature Ash approximately 12m in height, located within woodland.	A bat box is attached to the tree on the southern aspect, at approximately 5 m.	Moderate	No access - Moderate	Within
T20.18	NZ1741099698	Semi-mature Beech, approximately 12m in height, located within woodland.	Three bat boxes are attached to the tree, approximately 3-5 m in height.	High	-	Within
T20.19	NZ1740399649	Juvenile Oak, approximately 12m in height, located within woodland.	Bird box on the western aspect of the tree, approximately 2 m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.20	NZ1740799629	Juvenile Beech, approximately 12m in height, located within woodland.	Bird box on the western aspect of the tree, approximately 2 m in height. Bird box may provide potential for roosting bats	Low	-	Within

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2020 Ground Level Assessment of Potential to Support Bat Roosts	2020/2021 Aerial Climb and Pole Camera Inspection Category	Proximity to Order Limits
T20.21	NZ1702399605	Mature to over-mature Birch tree, approximately 7m in height, located within woodland - a typical example of Birch trees within the woodland section.	Tree of suitable maturity however, no PRF recorded.	Moderate	-	Outside
T20.22	NZ1740399590	Juvenile Beech, approximately 12m in height, located within woodland.	Bird box on the western aspect of the tree, approximately 3 m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.23	NZ1746599577	Semi-mature Ash, over 15m in height, located within woodland.	Bird box on the tree, approximately 2 m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.24	NZ1687099566	Mature to over mature Ash, over 15m in height, located at the edge of woodland - a badger sett is present beneath the tree.	Large truck crack on the western aspect, spanning from 1-3 m. Four knotholes on the western aspect between 3-4 m. Additional features were present across tree due its maturity.	High	-	Outside
T20.25	NZ1746299551	Semi-mature Ash, over 15m in height, located within woodland.	Bird box on eastern aspect approximately 2 m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.26-28	NZ1689499525	Three mature and over mature Ash all of which were over 15m in height. Located along arable field boundary - Trees not fully accessible due to access constraints.	PRF were present on all trees.	High	-	Within
T20.29	NZ1745499452	Semi-mature Ash, approximately 12 m in height, located within woodland.	Bird box on western aspect approximately 2 m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.30	NZ1745599421	Semi-mature Ash, approximately 12 m in height, located within woodland.	Bird box on south eastern aspect approximately 2 m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.31	NZ1776599191	Mature Alder, approximately 12 m in height, located in treeline along field boundary and water course.	A wound was present in the trunk associated with peeling loss bark and a knothole.	Low	-	Within
T20.32	NZ1774699190	Mature Alder, approximately 12 m in height, located in treeline along field boundary and water course.	Dense Ivy coverage of the tree which may conceal features of potential to roosting bats.	Moderate	-	Within

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2020 Ground Level Assessment of Potential to Support Bat Roosts	2020/2021 Aerial Climb and Pole Camera Inspection Category	Proximity to Order Limits
T20.33	NZ1756897561	Semi-mature Ash, approximately 12 m in height, located within treelined field boundary.	Large basal cavity which stretches into to trunk potential providing access to the internal structure of the tree.	Moderate	-	Outside
T20.34	NZ1757797464	Mature Oak approximately 12 m in height, located within treelined field boundary.	Dead branch and a knothole on southern aspect at approximately 8 m. The feature may provide access to the internal structure of the tree.	Moderate	-	Outside
T20.41	NZ1804796816	Mature Sycamore, over 15 m in height, located within woodland and adjacent to a river.	A single knothole was present on the western aspect at approximately 1 m.	Low	-	Outside
T20.42	NZ1820196677	Over-mature Ash, approximately 10 m in height. Located within treelined field boundary.	Basel rot and rotting features up main trunk. Additionally cracks were present within the bark across the trunk. The features may provide access to the internal structure of the tree.	Moderate	-	On boundary
T20.43	NZ1807896655	Mature Oak, over 15 m in height, located within woodland.	Basel cavity on the western aspect.	Moderate	-	Outside
T20.44	NZ1807096648	Dead Alder tree, approximately 12m in height, located within woodland.	Knothole presents up the length of the tree. The features may provide access to the internal structure of the tree.	Moderate	-	Outside
T20.45	NZ1804596611	Dead Ash tree, part felled, approximately 3 m in height, located within woodland and adjacent to a river.	Large internal cavity present, access to cavity could be gained though knothole on the northern aspect at 1.5 m.	Moderate	-	Outside
T20.46	NZ1835296465	Semi-mature Ash, approximately 7 m in height, located within tree-lined field boundary.	Basal cavity on the western aspect. Cavity is obscured by vegetation reducing potential access for roosting bats.	Low	-	Within
T20.47	NZ1847096146	Mature Oak tree, located within treelined field boundary.	A tear-out was present on the eastern aspect at approximately 3m.	Low	-	Within
T20.48	NZ1864996086	Dead Oak, approximately 3 m in height. Located within treelined field boundary.	An exposed crack was present running along the northern aspect	Low	-	Outside
T20.49	NZ1863596078	Mature Ash, approximately 7 m in height, located within treelined field boundary	Single hole at the base of the tree where the trunks split. The feature may provide access to the internal structure of the tree.	Moderate	-	Outside
T20.50	NZ1848396056	Mature Oak, approximately 10 m in height, located within treelined field boundary.	Two features present, both at 1.5m. The features may provide access to the internal structure of the tree.	Moderate	-	Outside

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2020 Ground Level Assessment of Potential to Support Bat Roosts	2020/2021 Aerial Climb and Pole Camera Inspection Category	Proximity to Order Limits
T20.51	NZ1848696046	Mature Oak, approximately 10 m in height, located within treelined field boundary.	A knothole was present within the trunk at approximately 4m.	Low	-	Outside
T20.52	NZ1855996026	Mature Oak, approximately 12 m in height, located within treelined field boundary.	Knothole to eastern aspect at approximately 2m. Feature appears to stretch back from torch inspection. The features may provide access to the internal structure of the tree.	Moderate	Moderate	Within
T20.53	NZ1853696021	Mature Oak, approximately 12 m in height, located within treelined field boundary.	Several trumpet features were present at end of branches across the tree. Due to the age of the tree these features may provide access to the internal structure of the tree.	Moderate	-	On boundary
T20.54	NZ1831095972	Mature Oak, approximately 12 m in height, located within treelined field boundary.	A knothole was present on the eastern aspect at approximately 2 m . Feature appears to stretch back. The features may provide access to the internal structure of the tree.	Low	-	Outside
T20.55	NZ1828695968	Mature Oak, approximately 12 m in height, located within treelined field boundary.	A single knothole was present.	Low	-	Outside
T20.56	NZ1849195887	Mature Oak, over 15 m in height, located at the edge of woodland.	A dead limb was present on the northern aspect, with additional woodpecker holes along length of tree. Features were superficial and suboptimal for roosting bats	Low	-	Outside
T20.57	NZ1860095842	Mature Ash, approximately 7 m height, located within treelined field boundary.	Knothole present on the northern aspect, at approximately 1.5 m . The features may provide access to the internal structure of the tree.	Moderate	Moderate	Within
T20.58	NZ1861795830	Mature Ash, approximately 7 m high. Located within treelined field boundary.	Large cavity within trunk which leads into hollow branch. The features may provide access to the internal structure of the tree.	Moderate	Moderate	Within
T20.59	NZ1873595815	Mature Oak, approximately 12 m in height, located within treeline field boundary.	A single knothole was present.	Low	-	Outside
T20.60	NZ1876695814	Mature Oak, approximately 5 m in height, located within treelined field boundary.	A rotten cavity was present where a branch had broken off. The features may provide access to the internal structure of the tree.	Moderate	-	Outside
T20.61	NZ1841695788	Mature Ash, over 15 m in height, located at the edge of an arable field.	Multiple features present across the tree including a cavity in main trunk, eastern aspect, at 1 m. Additionally there was a tearout on western	Moderate	-	Outside

Tree Reference	Grid reference	Description	External Features with Potential to Support Roosting Bats	2020 Ground Level Assessment of Potential to Support Bat Roosts	2020/2021 Aerial Climb and Pole Camera Inspection Category	Proximity to Order Limits
			aspect at 1.5 m (this feature was upward-facing resulting in limited suitability for bat roosting).			
T20.62	NZ1845395774	Mature Ash, approximately 12 m in height, located within treelined field boundary	1 wound was present in the in trunk on northern aspect at approximately 1m. A similar wound was also present at 5 m on branch off main trunk. These features may provide access to the internal structure of the tree.	Moderate	-	Outside
T20.63	NZ1842295763	Over-mature to dead Ash, approximately 10 m in height, located within treelined field boundary.	Multiple features across the tree including, dead branches with loose bark, knotholes. A large basal cavity was present within central trunk. These features may provide access to the internal structure of the tree.	High	-	Outside
T20.64	NZ1846795758	Dying Ash, approximately 12m in height, located within treelined field boundary.	A rotten Lime was present on the southern aspect. A knothole was also present on the southern aspect of the central trunk.	Moderate	-	Within
T20.65	NZ1855395343	Dead Oak, approximately 3 m in height.	Cracks were present across the tree many of which were exposed. However, some cracks may be of a depth that provides suitability for bats.	Moderate	-	Outside
T20.66	NZ1899695287	Mature Oak, approximately 12 m in height, located within treelined field boundary	A trunk cavity was present at the base of a rotten Lime, at the western aspect, at 2 m. The feature goes a short way into the tree.	Low	-	Within
T20.68	NZ1856795223	Mature Oak, over 15 m in height, located within treelined field boundary.	Tree of suitable maturity however, no PRF recorded.	Low	-	Within
T20.69	NZ1855295181	Mature Oak, approximately 12 m in height, located within treelined field boundary.	No PRF were identified and the tree was in a healthy condition. Ivy coverage of the tree may conceal features of potential to roosting bats.	Low	-	Within
T20.70	NZ1850695170	Mature Oak, approximately 12 m in height, located within treelined field boundary.	Loose bark was present, associated with a dead branch on the western aspect at 3 m. A minor cavity was also present at this location.	Low	-	Within
T20.71	NZ1849295165	Mature Oak, approximately 7 m in height, located within treeline field boundary.	Loose bark was present, associated with a dead branch on the southern aspect. A minor cavity was also present at this location.	Low	-	Within
T20.72	NZ1845595158	Mature Oak, over 15 m in height, located within treelined field boundary.	Small cavity within the trunk on the southern aspect at 2 m. Additionally there is a tear-out on the southern aspect at 3m. Following PoleKam	Moderate	Negligible	Within

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			inspection, features do not provide roosting opportunities.			
T20.73	NZ1847095145	Mature Oak, approximately 7m in height, located within treelined field boundary.	A trunk cavity was present on the western aspect at 1 m. Following PoleKam inspection, feature did not provide roosting opportunities. ~~This feature may provide access to the internal structure of the tree.~~	Moderate	Negligible	Within
T20.74	NZ1839595143	Mature Lime, over 15 m in height, located at the edge of woodland.	Knothole at the end of a branch on the southern aspect at 6 m.	Low	-	Outside
T20.75	NZ1868894960	Mature Oak, approximately 5 m in height, located within treelined field boundary.	Single cavity within trunk on the northeast aspect at 1 m. The feature was obscured by vegetation.	Low	-	Within
T20.76	NZ1868994952	Mature Oak, approximately 12m in height, located within treelined field boundary.	A branch cavity was present on the north-eastern aspect at 3 m. Features only go back a small amount. ~~The feature may provide access to the internal structure of the tree.~~	Moderate	Low	Within
T20.77	NZ1869294936	Mature Oak, approximately 12m in height, located within treelined field boundary.	Cavities were present on branches growing northwest and southeast. Ivy coverage of the tree may conceal features of potential to roosting bats.	Moderate	Moderate	Within
T20.78	NZ1869994905	Mature Ash, approximately 12m in height, located within treelined field boundary.	Ivy coverage of the tree may conceal features of potential to roosting bats.	Low	-	Within
T20.79	NZ1870194893	Mature Ash, approximately 12m in height, located within treelined field boundary.	Ivy coverage of the tree may conceal features of potential to roosting bats.	Low	-	Within
T20.80	NZ1895094798	Mature Sycamore, over 15 m in height, located within treelined field boundary	Bird box on south-eastern aspect approximately 3 m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.81	NZ1893794783	Mature Oak, approximately 12 m in height, located within treeline adjacent to private garden.	Bird box on eastern aspect approximately 4 m in height. Bird box may provide potential for roosting bats. A small cavity was present at the base of a dead limb on the northwest aspect at 6 m	Low	-	Within
T20.82	NZ1873894783	Mature Cherry tree, approximately 7 m in height, located within treelined field boundary.	Ivy coverage of the tree may conceal features of potential to roosting bats.	Low	-	Within
T20.83	NZ1877294728	Mature Oak, approximately 12m in height, located within treelined field boundary.	Peeling bark was present across the tree.	Low	-	Within

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T20.84	NZ1882394685	Over-mature Cherry tree, approximately 15 m in height, located within treeline adjacent to private garden.	Large trunk cavity present on the south-eastern aspect at approximately 1 m. The cavity was very exposed.	Low	-	Within
T20.85-86	NZ1880894676	Two trees approximately 15 m in height located within treelined field boundary and adjacent to a water course.	Ivy coverage of the tree may conceal features of potential to roosting bats.	Low	-	Within
T20.87	NZ1887794612	Mature Oak approximately 12m in height located within treeline adjacent to private garden.	Two knotholes were present. They did not provide access to the internal structure of the tree.	Low	-	Within
T20.88	NZ1878094537	Mature Cherry tree, approximately 12 m in height, located within treelined field boundary.	A section of rot was present at the base of the tree which resulted in peeling bark up the length of the tree. Additionally, there was a basal cavity which may provide access to the internal structure of the tree.	Moderate	-	Within
T20.89	NZ1877694531	Mature Ash, -approximately 12m in height, located within a treelined field boundary.	A trunk cavity was present. The cavity was exposed.	Low	-	Within
T20.90	NZ1869094526	Mature Cherry tree, approximately 12m in height, located within treelined field boundary.	Single trunk cavity on the westerly aspect at 1.25 m	Low	-	Within
T20.91	NZ1850094515	Mature Oak, approximately 12m in height, located within treelined field boundary.	Single knothole on the western aspect at 2 m. Entry to the hole is currently obscured by a wasp's nest.	Low	-	Outside
T20.92	NZ1870494497	Mature Oak, -approximately 12m in height, located within treelined field boundary.	Single knothole on the eastern aspect at 3 m. Additional lifting bark was present. These features were exposed, limiting suitability.	Low	-	Within
T20.93	NZ1848694439	Over-mature Sycamore, over 15m in height located with a cluster of trees within a pasture field.	A large basal cavity was present stretching up to 3m. There was a hole at the top of the cavity potentially providing access to the internal structure of the tree.	Moderate	-	Outside
T20.94	NZ1850594401	Mature Oak, approximately 12m in height. Located within a pasture field.	Significant sections of lose bark were present across the tree.	Moderate	-	Outside
T20.95	NZ1844994388	Over mature Cherry tree, over 15m in height, located with a cluster of trees within a pasture field.	Large basal cavity which stretches into to trunk potential providing access to the internal structure of the tree.	High	-	Outside

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T20.96	NZ1846494364	Mature Oak, over 15m in height. located with a cluster of trees within a pasture field	A split was present on the northern aspect of a limb at 4m.	Low	-	Outside
T20.97	NZ1857194326	Two mature Ash, approximately 12m in height, located within treelined field boundary.	A tear-out was present on the western most tree on the western aspect. Additionally, there was a cavity in the centre of the trunk.	High	Moderate	Within
T20.98	NZ1849694247	Mature Oak, approximately 12m in height, located within treelined field boundary.	Cavity where branch splits from trunk on the southern aspect at 4m. Additionally there was a small hole within the trunk on the southern aspect at 2m. These features potentially provide access to the internal structure of the tree.	Moderate	-	Outside
T20.99	NZ1871693817	Mature Oak tree, approximately 5m in height, located within treelined field boundary.	A hazard beam was present on branch growing west. Additionally, a basal cavity was present, however, this was obscured by vegetation.	Low	-	Outside
T20.100	NZ1873093720	Mature Ash, approximately 12m in height. Centrally located within a pasture field.	Knothole was present on the western aspect of the trunk at 1 .5m. Rot at the top of the hole may provide access to internal trunk structure.	Moderate	-	Outside
T20.101	NZ1845193425	Mature Ash, over 15m in height located within treelined field boundary.	Tree of suitable maturity however, no PRF recorded.	Low	-	Outside
T20.102	NZ1828093333	Mature Ash, over 15m in height located within treelined field boundary.	Knotholes were present across the tree.	Moderate	-	Within
T20.103	NZ1820893310	Mature Ash, approximately 12m in height, located within treelined field boundary.	The trunk was rotten with a large cavity present.	High	-	Within
T20.104	NZ1821593310	Mature Ash, over 15m in height located within treelined field boundary.	Superficial features were present. A frost crack was present on the trunk's northern aspect.	Low	-	Within
T20.105	NZ1819693305	Mature Ash, approximately 12m in height, located within treelined field boundary.	A trunk cavity was present. The cavity was slightly obscured as it was between intertwined trunks.	High	-	Within
T20.106	NZ1819193304	Mature Ash, approximately 12m in height, located within treelined field boundary.	The trunk was rotten with a large cavity present.	High	-	Within
T20.107	NZ1830393051	Mature Oak, approximately 12m in height, located within treelined field boundary.	A large trunk cavity was present, the cavity was blinded ended and exposed. An additional feature was present in the form of a crack on the northern facing aspect at 2m. The feature was above the cavity running along the trunk and across branch.	Moderate	Moderate	Within

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T20.108	NZ1862192826	Mature sycamore approximately 12m in height, located within treelined field boundary.	A single knothole was present.	Low	-	Outside
T20.109	NZ1862292796	Mature Oak, approximately 12m in height, located within treelined field boundary.	Two knotholes were present on the western and north-western aspect, at 2m and 1m respectively.	Moderate	-	Outside
T20.110	NZ1839992759	Mature Oak, approximately 12m in height, located within treelined field boundary.	Tear-out was present on the western aspect at 4m.	Moderate	-	Outside
T20.111	NZ1839992755	Mature Oak, approximately 12m in height, located within treelined field boundary.	A knothole was present on the southwestern aspect at 4m.	Moderate	-	Within
T20.112	NZ1790792314	Mature Ash, over 15m in height, located within treelined field boundary.	Multiple knotholes were present across the length of the tree.	High	-	Within
T20.113	NZ1820792291	Mature Ash, over 15m in height, located within treelined field boundary.	A large trunk was present, bird nesting material was recorded at the top of the cavity.	Moderate	-	Within
T20.114	NZ1840592257	Mature Ash, over 15m in height, located within an arable field.	A large trunk cavity present, there is evidence that the tree may be hollowing. In addition, broken branches and peeling bark were present.	Moderate	-	Within
T20.115	NZ1785892198	Mature Ash, over 15m in height, located within treelined field boundary.	Ivy coverage of the tree, may conceal features of potential to roosting bats.	Low	-	On boundary
T20.116	NZ1777492082	Over mature sycamore approximately 12m in height, located within treelined field boundary.	Multiple features were present across the length of the tree.	High	-	Within
T20.117	NZ1825392050	Over mature Ash approximately 12m in height, located within treelined field boundary and adjacent to a water course.	A large trunk cavity was present stretching from 4m-6m. In addition, a knothole was present on the southern aspect at 4m and a dead branch was present on the eastern aspect.	High	-	Outside
T20.118	NZ1825692045	Dead Ash approximately 12m in height, located within treelined field boundary and adjacent to a water course.	Multiple features were present across the length of the tree.	High	-	Outside
T20.119	NZ1826192010	Mature Ash approximately 12m in height, located within treelined field boundary and adjacent to a water course.	Multiple knotholes were present across the length of the tree. In addition, a dead branch and peeling bark was also present.	Moderate	-	Outside
T20.120	NZ1833991933	Mature Ash approximately 12m in height, located within treelined field boundary and adjacent to a water course.	Ivy coverage of the tree may conceal features of potential to roosting bats.	Low	-	Outside

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T20.121	NZ1834491821	Mature Oak approximately 12m in height, located within treelined field boundary and adjacent to a water course.	Ivy coverage of the tree, may conceal features of potential to roosting bats.	Low	-	Outside
T20.122	NZ1860391671	Dead tree, over 15m in height, located within a private garden near woodland and water course.	Knotholes were present across the tree. These features potentially provide access to the internal structure of the tree. Unsafe to climb due to structural condition.	Moderate	Moderate	Within
T20.123	NZ1860391667	Mature Ash, over 15m in height, located within a private garden near woodland and water course.	A knothole was present on the northern aspect at 5m. across the tree. This feature potentially provides access to the internal structure of the tree (could not be scoped out by inspection). In addition, Ivy coverage of the tree may conceal features of potential to roosting bats.	Moderate	Moderate	On boundary
T20.124	NZ1860891645	Dead Oak, over 15m in height. Located within woodland and near water course.	A single knothole was present on the eastern aspect at 5m. In addition, peeling bark was present.	Low	-	Outside
T20.125	NZ1860291528	A mature Holly tree, approximately 3m in height, located with in woodland.	A trunk cavity was present., The features potentially provide access to the internal structure of the tree.	Moderate	-	Outside
T20.126	NZ1838991305	Mature Oak approximately 15m in height, located within treelined field boundary and adjacent to a water course.	A hazard beam was present on a branch stretching west at 6m.	Low	-	Outside
T20.126	NZ1838991305	Mature Oak approximately 15m in height, located within treelined field boundary and adjacent to a water course.	A hazard beam was present on a branch stretching west at 6m.	Low	-	Outside
T20.127	NZ1824690970	Mature Ash, over 15m in height, located within treelined field boundary.	Several knotholes were present across the tree, however they were superficial and did not stretch back into the tree's internal structure.	Low	-	Within
T20.128	NZ1822290876	Mature Ash, over 15m in height, located within treelined field boundary.	A knothole was present within the trunk.	Moderate	-	On boundary
T20.129	NZ1819590860	Mature Ash, over 15m in height, located within treelined field boundary.	A cavity within the trunk was present. The feature potentially provides access to the internal structure of the tree.	Moderate	-	Outside
T20.130	NZ1820690855	Mature Ash, approximately 12m in height, located within treelined field boundary.	A single knothole was present on the southern aspect at 4m.	Low	-	Outside

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T20.131	NZ1791288749	Mature Ash, over 15m in height, located within treelined field boundary.	Multiple feature was recorded across the tree.	High	-	Outside
T20.132	NZ1801188722	Mature Ash, over 15m in height, located within treelined field boundary.	Large cavities were present within both trunks of the tree. These features potentially provide access to the internal structure of the tree, although not considered of High suitability.	High	Moderate	Outside
T20.133	NZ1848588694	Mature Oak, over 15m in height, located on defunct hedgerow.	Tree of suitable maturity, however no PRF recorded.	Low	-	Within
T20.134	NZ1797488682	Semi-mature Oak, approximately 12m in height, located adjacent to arable and pasture fields.	Cracks were present within limbs stretching south and west.	Low	-	Outside
T20.135	NZ1819588639	Mature Oak, over 15m in height, located in a private garden adjacent to woodland.	A dead limb with a cavity at its base was present on the southeast aspect at 5m. Additionally a wound was present on the east aspect of a limb growing north. These features potentially provide access to the internal structure of the tree.	Moderate	Moderate	Outside
T20.136	NZ1817988614	Semi-mature Beech, approximately 12m in height, located within woodland.	Bird box on south eastern aspect approximately 1.5m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.137	NZ1818988606	Semi-Mature Scot's pine, approximately 12m in height, located within woodland.	Bird box on south-eastern aspect approximately 1.5m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.138	NZ1816088595	Semi-Mature Sycamore, approximately 12m in height, located within woodland.	Bird box on northern aspect approximately 1.5m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.139	NZ1817988584	Semi-Mature Scot's pine, approximately 12m in height, located within woodland.	Bird box on northern aspect approximately 1.5m in height. Bird box may provide potential for roosting bats.	Low	-	Within
T20.140	NZ1847688428	Mature Ash, over 15m in height located within treelined field boundary.	A trunk cavity was present, access to the cavity was obscured by vegetation.	Low	-	Within
T20.141	NZ1815588252	Mature Ash, over 12m in height located within treelined field boundary.	Two knotholes were present on the southern aspect at 3 - 4m. The lower hole stretches into the trunk this features potentially provide access to the internal structure of the tree.	Moderate	-	Outside

Table A-5 – Woodland PBRA Results

Woodland Reference	Grid reference	Woodland Description	Assessment of Potential to Support Bat Roosts	Proximity to Order Limits
Previously Classified				
T35A	NZ1865991640	Mature and semi-mature broadleaved woodland dominated by Beech and Sycamore.	Low (no change from 2016/17)	Outside
T158A	NU1733900379	Mixed woodland. Broadleaf species dominate to the west. Coniferous to the east. Mature trees all greater that 20m. Not specific PRF observed but dead wood present.	Low (no change from 2016/17)	Outside
Newly Classified				
W20.1	NU1760700324	Mixed woodland.	Low	Outside
W20.2	NU1757200253	Mixed woodland with mature trees.	Moderate	Outside
W20.3	NZ1742299975	Immature to semi-mature trees, running adjacent to the A1. Bird and bat boxes are present within the woodland.	Low	Within
W20.4	NZ1765499935	Woodland on embankment by the River coquet. Mature and semi-mature trees. tree species include Oak, Beech, Sycamore, Birch and Elder. Large tree was present. Ivy was present on some trees.	Low	Within
W20.5	NZ1753299804	Woodland on embankment by the River Coquet. Mature and semi-mature trees. Tree species include Oak, Beech, Sycamore, Birch and Elder. Large trees were present. Ivy was present on some trees. The trees grow tall and straight with limited roosting suitability. The steepness of the bank restricted assessment.	Low	Within
W20.6	NZ1808096851	Scott's pine dominated woodland; other species were present. Dead wood was present throughout.	Low	Within
W20.7	NZ1696699686	Semimature - mature woodland. Birch dominated.	Moderate	Outside
W20.8	NZ1848792656	Mature broad-leaved woodland.	Low	Outside

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