

A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010059

6.54 Updated Desk Study and Habitat Verification Survey Report

Rule 8(1)(c)

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

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Infrastructure Planning

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(Examination Procedure) Rules 2010**

**The A1 in Northumberland: Morpeth to Ellingham
Development Consent Order 20[xx]**

Updated Desk Study and Habitat Verification Survey Report

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EXECUTIVE SUMMARY

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

The DCO Examination closed on 05 July 2021, with extensions made by the Secretary of State to the decision date for the DCO application until 05 June 2024 (decision date at the time of writing).

Given the length of time since the close of the DCO Examination in 2021, the Applicant has completed an updated ecology desk study and a habitat validation walkover for the Scheme. The habitat walkover survey was carried out to confirm that the habitat types have not changed significantly from the original baseline assessment that was set out in the Application. The information collected has been used to validate the impact assessment and mitigation proposed within the Application (and as updated during the Examination).

The updated desk study identified no additional designated sites or areas of Habitats of Principal Importance (HPI) and ancient woodland in comparison to those assessed within **Chapter 9: Biodiversity Part A [APP-048]** and **Chapter 9: Biodiversity Part B [APP-048]**. Therefore, the impact assessments and significance of effect detailed within the chapters in relation to these receptors remains the same. As detailed within this report, this statement excludes impacts and effects associated with air quality for designated sites and ancient woodland for Part A. An updated assessment has been completed and reported separately (**6.33 Updated Biodiversity Air Quality Assessment, Rev 2**, submitted alongside this document).

Phase 1 habitats identified during the verification survey were broadly the same as those identified during the original assessment (**Figure 9.1 Final Phase 1 Plan Part A [APP-105]** and **Figure 9.3 Phase 1 Habitat Survey Part B [APP-155]**). There were no changes that would result in amendments to the impact assessments or the significance of effect detailed in **Chapter 9: Biodiversity Part A [APP-048]** and **Chapter 9: Biodiversity Part B [APP-048]**.

A review of updated desk study information and survey data collected since the Examination and information collected during the 2023/2024 habitat walkover survey was undertaken. This found no changes that would result in amendments to the impact assessments or significance of effect detailed within the DCO documentation in relation to protected and notable species.

As such, the updated desk study and habitat verification survey confirms that the mitigation and compensation measures outlined within the **Outline Construction Environmental Management Plan [REP11-006]** remain valid.

1. INTRODUCTION

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

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

- 1.1.1. A detailed description of the Scheme can be found in **Chapter 2: The Scheme** of the Environmental Statement ('ES') [APP-037].
- 1.1.2. The DCO Examination closed on 05 July 2021. Under section 107(3) of the Planning Act 2008, the Secretary of State exercised their power to extend the deadline for decision, resulting in a new deadline of 05 June 2024. Given the length of time since the close of the DCO Examination in 2021, the Secretary of State issued a letter to the Applicant on 11 October 2023 requesting that the Applicant confirm whether any updates were necessary to any of the application documentation or other documentation provided during the Examination.
- 1.1.3. In its response dated November 2023, the Applicant confirmed that an updated ecology desk study and a habitat validation walkover would be undertaken for the Scheme (as defined by the red line boundaries within the Order Limit Plans [REP10-009] and shown on **Figure 1 (Part A) and Figure 2 (Part B)** of this report). The habitat walkover survey was proposed to confirm that the habitat types have not changed significantly from the original baseline assessment that was set out in the Application. It was proposed that the information collected would then be used to validate the impact assessment and mitigation proposed within the Application (and as updated during the Examination). The validation assessment was proposed in recognition of the advice note published in April 2019 by the Chartered Institute of Ecology and Environmental Management (CIEEM) in relation to the lifespan of ecological reports and surveys [Ref. 1].
- 1.1.4. This document details the methods, results and conclusions of the validation assessment completed.

2. METHODOLOGY

2.1. DESK STUDY

- 2.1.1. A desk study was undertaken between December 2023 and January 2024 to review existing ecological baseline information available in the public domain and to obtain information held by relevant third parties. The aim of this desk study was to identify any additional information since the completion of the original desk studies. The original desk studies were completed between April and June 2016 and updated in September 2018 for Part A (detailed in **Chapter 9: Biodiversity Part A [APP-048]**) and between September and December 2019 for Part B (detailed in **Chapter 9: Biodiversity Part B [APP-049]**). For the purpose of the desk study exercise, records were collated within various radii around the boundary of the Order Limits; the same radii as those used during the original baseline desk studies for Part A and Part B. This approach remains consistent with current good practice guidance published by CIEEM [**Ref. 2** and **Ref. 3**]. Only records returned since the original desk studies were carried out are reported as additional records within this report. The following information was requested and received from Environmental Records Information Centre (ERIC) North East.
- a. Records of legally protected and notable species from the past 10 years within 2km of the Order Limits for the Scheme;
 - b. Records of bats was extended to within 5km of the Order Limits; and
 - c. Records of non-statutory sites designated for nature conservation value within 2km of the Order Limits.
- 2.1.2. The Multi-agency Geographic Information for the Countryside (MAGIC) online database [**Ref. 4**] and freely downloadable datasets available from Natural England were consulted for information regarding the presence of statutory designated sites within 2km of the Order Limits (Local Nature Reserves (LNRs), National Nature Reserves (NNRs) and Sites of Special Scientific Interest (SSSIs)). This search was extended to 10km for internationally designated sites (Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites). In addition, MAGIC was also used to search for granted European Protected Species (EPS) licences within 2km of the Order Limits. Freely downloadable datasets (available from Natural England) were consulted for information regarding Habitats of Principal Importance (HPI) within the Order Limits and woodland listed on the Ancient Woodland Inventory within 1km of the Order Limits.
- 2.1.3. A review of survey data collected and reports prepared by the Applicant for the Scheme since those presented with the DCO Examination was also undertaken as part of the desk study to identify any new information that may change the baseline assessment. Details of these surveys and reports are summarised within **Tables 3-1 and 4-1** of this report.
- 2.1.4. The findings of the desk study have been incorporated within the results section of this report. The desk study was carried out by an Assistant Ecologist with experience in undertaking desk studies of this nature.

FIELD SURVEY

- 2.1.5. A Phase 1 habitat verification survey was undertaken for Part A in January 2024 and Part B in December 2023. This included a walkover of the Order Limits and previously surveyed habitats (where accessible) to confirm or update habitat type classification in comparison to those reported during the original baseline assessments (as shown in **Appendix 9.1 Extended Phase 1 Habitat Survey Report Part A [APP-227]** and on **Figure 9.1 Final Phase 1 Plan Part A [APP-105]** and **Figure 9.3 Phase 1 Habitat Survey Part B [APP-154]**).
- 2.1.6. The Phase 1 habitat survey was carried out by ecologists with at least Qualifying membership of CIEEM, who have extensive experience of habitat surveys for a variety of schemes in urban and rural locations on greenfield and brownfield sites.
- 2.1.7. Habitats were described and mapped following the Phase 1 habitat survey methodology [**Ref. 5**], the same methodology used during the original baseline assessment. Habitats were classified according to their vegetation types. Where appropriate, consideration was given to whether habitats qualify, or could qualify, as a HPI in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 [**Ref. 6**], following habitat descriptions published by the Joint Nature Conservation Committee [**Ref. 7**].
- 2.1.8. Habitats were recorded via digital tablet using Geographical Information System (GIS) software. Where required, target notes were made to capture information on specific features of ecological interest (e.g. a badger sett) or habitat features too small to be mapped. The findings of the verification walkover survey are presented on **Figures 3 (Part A) and 4 (Part B)**.
- 2.1.9. Data from the 2023 and 2024 verification surveys was compared against original baseline results (as detailed within **Chapter 9: Biodiversity** for **Part A [APP-048]** and **Part B [APP-049]**) and relevant documentation submitted during the DCO Examination (referenced within this report).

2.2. NOTES AND LIMITATIONS

- 2.2.1. Habitat verification field surveys were carried out at a suboptimal time of year for plant identification. However, the objective of the survey was to validate that the broad habitat type remained the same or similar and not to identify or update a full plant species list. Environmental conditions experienced at the time of the verification walkover survey were considered suitable for the aims and objectives of the survey. As such, the results detailed within this report and the conclusions drawn are considered valid.

There were some areas within the Order Limits and previously surveyed habitats that were not accessible during the field survey as access was not granted by the landowner. Areas not accessed are indicated on **Figures 3 and 4**. The majority of inaccessible land was located outside of the Order Limits; notably at the northern end of Part A, to the east of the the section of the A1 that is proposed should be de-trunked or at the southern end of the Scheme around Morpeth. These habitats will not be directly impacted by the Scheme and

the **Outline Construction Environmental Management Plan (CEMP) [REP11-006]** provides for mitigation measures to avoid or reduce indirect impacts (for example dust deposition to be controlled by measures detailed within a Dust Management Plan (measure S-A1)). Therefore, access limitations outside the Order Limits do not impact the conclusions made within this assessment. For inaccessible areas within the Order Limits, in most cases (with the exception of private dwellings and gardens), it was possible to observe the habitats from neighbouring accessible land to validate the habitat type present. Where inaccessible areas represented private dwellings and associated gardens, it is reasonable to conclude that there are unlikely to be changes that would invalidate the impact assessment and mitigation proposals detailed within the existing DCO documentation given the typical management these spaces are subject to. When considering the mitigation proposed as part of the DCO, the level of access achieved and the findings of the survey within accessible areas (i.e. no significant changes to habitats present), access limitations were not considered to present a significant constraint to the objectives of this verification assessment.

- 2.2.2. The updated assessment presented within this report in relation to designated sites and ancient woodland for Part A does not consider impacts and effects associated with air quality. An updated assessment of air quality impacts and effects on ecological receptors for Part A is detailed within a separate report (document reference: **6.33 Updated Biodiversity Air Quality DMRB Sensitivity Assessment, Rev 2**). Significant effects to ecological receptors as a result of changes in air quality were not predicted within the original assessment for Part B (see paragraph 9.10.21 of **Chapter 9: Biodiversity Part B [APP-049]**). This conclusion remains the same following the verification exercise.

3. RESULTS – PART A

3.1. DESIGNATED SITES

- 3.1.1. No additional statutory or non-statutory designated sites were identified during the desk study in comparison to those assessed within **Chapter 9: Biodiversity Part A [APP-048]**. Therefore, the impact assessment and significance of effect detailed within **Chapter 9: Biodiversity Part A [APP-048]** in relation to designated sites remains the same¹.

3.2. HPI AND ANCIENT WOODLAND

- 3.2.1. No additional areas of HPI or ancient woodland were identified during the desk study in comparison to those assessed within **Chapter 9: Biodiversity Part A [APP-048]**. Therefore, the impact assessment and significance of effect detailed within **Chapter 9: Biodiversity Part A [APP-048]** in relation to HPI and ancient woodland² remains the same.

3.3. HABITAT WALKOVER

- 3.3.1. Full details of the habitats originally recorded within the Order Limits for Part A are detailed in **Chapter 9: Biodiversity Part A [APP-048]**.
- 3.3.2. The original baseline assessment identified that the majority of the Order Limits for Part A comprised arable farmland (37%), poor semi-improved grassland (17%) and improved grassland (15%) of low conservation importance. Some HPI were present within the Order Limits, including broadleaved woodland, neutral semi-improved grassland³, standing water, running water, hedgerows and arable field margins⁴.
- 3.3.3. The 2024 habitat verification survey identified habitats to be largely unchanged since the original baseline assessment, with the majority of the Order Limits continuing to represent agricultural land. There were areas of land use change where arable fields had changed use to improved grasslands used for grazing (or vice versa). However, the overall ecological value and importance of these habitats remains the same.
- 3.3.4. A few relatively small patches of semi-natural habitats (<0.1 ha) had naturally succeeded as a result of a lack of, or limited, management. For example, this included small areas of tall ruderal or grassland habitats that had succeeded to scrub, notably to the west of the A1 adjacent to Burgham Park Golf Course (centred around grid reference NZ 17856 97091). In addition, an area previously identified as poor semi-improved grassland had become marshy grassland around standing water also adjacent to the golf course. However, these

¹ With the exception of impacts and effects associated with air quality, in accordance with **paragraph 2.2.2**.

² With the exception of impacts and effects associated with air quality, in accordance with **paragraph 2.2.2**.

³ Only classified as a HPI when this meets the criteria of 'Lowland Meadows' or 'Upland Hay Meadows' as outlined by JNCC.

⁴ Whilst arable fields themselves do not qualify as an HPI, arable field margins are listed as an HPI although are not afforded a separate JNCC Phase 1 habitat classification.

minor changes would not alter the overall impact assessment or significance of effect detailed within the Application (and as updated during the Examination).

- 3.3.5. Habitat changes as identified during the 2024 verification survey are shown in bold on **Figure 3**. Overall, the findings of the updated assessment do not change the importance classification of habitats within the Order Limits, the impact assessment or the significance of effect detailed in **Chapter 9: Biodiversity Part A [APP-048]**.

3.4. PROTECTED/NOTABLE SPECIES

- 3.4.1. Full details of the findings of the original baseline assessment are detailed in **Chapter 9: Biodiversity Part A [APP-048]**. **Table 3-1** below provides a summary of the updated 2024 assessment in relation to protected/notable species. This includes the results of the updated desk study, a summary of any additional survey data collected since the Examination and any pertinent information collected during the 2024 walkover. The table also summarises any changes, where appropriate, to the original baseline assessment presented within the ES or additional documentation submitted during the Examination (referenced as the “DCO documentation”).Table 3-1

Table 3-1 – Part A Updated Protected / Notable Species Results (Desk Study and Field)

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
<p>Great crested newt <i>Triturus cristatus</i> (GCN)</p>	<p>The updated desk study returned an additional 12 records of GCN since September 2018 (original desk study). Eight of the additional records were located at Burgham Park Golf Course, a known GCN population that was assessed as part of the ES. A draft licence for impacts to the GCN population at Burgham Part was prepared as part of the DCO documentation (Appendix 9.25 Great Crested Newt Method Statement Burham Park Part A [APP-251]).</p> <p>Three of the additional records relate to the known GCN populations within/near waterbodies A19 and A21 for which a draft licence was prepared as part of the DCO documentation (Appendix 9.24 Great Crested Newt Method Statement River Coquet Part A [APP-250]). These three records also relate to further surveys undertaken by the Applicant in 2021 (see next column for further details).</p> <p>The final additional record was of a GCN population at Old Swarland, approximately 1.4km to the northwest of Part A. Given the distance between this record and the Order Limits, the habitats within the Order Limits are not functionally linked to the GCN population and no impacts are predicted as a result of the Scheme.</p> <p>A single additional EPS Licence relating to GCN was returned by the desk study. This was located at Burgham Park Golf Course, adjacent to the Order Limits. As detailed above, impacts to the known GCN population at Burgham Park were addressed as part of the DCO documentation.</p>	<p>Updated GCN surveys were carried out in May and June 2021 by the Applicant. This included an updated population size class assessment for those waterbodies where GCN were recorded during the original baseline assessment (waterbodies A11, A12, A19 and A21) [REP1-017]. The survey also included an updated presence/likely absence survey for waterbodies A7, A13, A14 and A20 where “drying out” was previously recorded or access was previously refused [REP1-017].</p> <p>No change was recorded between the verification surveys in 2021 and results described in Chapter 9: Biodiversity Part A [APP-048] for waterbodies A7, A8, A13 and A14.</p> <p>Waterbodies A20 and A21 are adjacent to each other. During the original assessment [REP1-017], waterbody A20 dried out but a Low population of GCN (peak count of four GCN) was recorded in waterbodies A21. In 2021, GCN were likely absent from waterbody A21, but a Low population (peak count of one GCN) was recorded in A20. As such, the GCN population at this location remains comparable to the original assessment.</p> <p>A Low population size class was previously recorded in pond A12 [APP-048], with a peak count of a single GCN. However, GCN were likely absent in A12 during the 2021 surveys. The population size class for waterbody A11 had reduced in the 2021 surveys (Medium (peak count of 16 GCN) [APP-048] to Low (peak count of 8 GCN). As such, the original assessment can be considered a reasonable worst-case assessment in relation to GCN at waterbodies A11 and A12.</p> <p>The population size class of GCN within waterbody A19 had increased in 2021, from Low (peak count of four GCN [APP-048]) to Medium (peak of 11 GCN).</p>	<p>The 2024 habitat walkover survey did not record any notable changes or information relating to GCN.</p> <p>A large hibernaculum (log pile that appeared man-made) was noted within the Survey Area (shown as TN8 on Figure 3). However, no waterbodies that could support GCN are known to be present within 500m and the feature is located outside the Order Limits.</p>	<p>The 2021 survey data identified an increase in the population size class of GCN within waterbody A19 (Low to Medium).</p> <p>Although the A19 population size class has increased, the change in peak count numbers of GCN was relatively small (peak count of four to peak count of 11). Therefore, the importance of great crested newts within the study area for Part A (as defined in Chapter 9: Biodiversity Part A [APP-048]) would remain the same. In addition, the mitigation and compensation proposed within the Outline Construction Environmental Management Plan (CEMP) [REP11-006] remains valid (measures A-B18, A-B22 and SW-B3).</p> <p>A draft licence was prepared as part of the DCO documentation in relation to impacts to the GCN population associated with waterbody A19 (Appendix 9.24 Great Crested Newt Method Statement River Coquet Part A [APP-250]). Any amendments necessary to account for the increase in population size class would be accommodated within the formal licence application. However, the approach to licensing and how this is secured via the DCO is unaffected.</p> <p>As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048] remains valid.</p>

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
Bats	<p>The 5km updated desk study search returned an additional 172 records of bat since September 2018. The species composition remained comparable to the original baseline assessment [APP-048].</p> <p>Of these 172 records, 14 relate to bat roosts, although none were located within the Order Limits or within a distance where disturbance may occur during construction (nearest approximately 750m west of the Order Limits).</p> <p>Five new EPS Licences were identified since September 2018, relating to the destruction of bat roosts. However, none were located within the Order Limits or within a distance where disturbance may occur during construction (nearest approximately 500m east of the Order Limits).</p>	<p>An updated assessment and surveys of buildings/structures and trees, where accessible, was completed in May and September 2021 in relation to mitigation measure S-B7 of the Outline CEMP [REP11-006]. The following notable findings were recorded (with reference to potential for changes to the impact assessment):</p> <ul style="list-style-type: none"> - 12 trees were upgraded to Moderate roosting suitability. All were subject to further survey (endoscope and/or dusk and dawn surveys) and no bat roosts were recorded. - Two new trees with Moderate roosting suitability were identified (T2021A at NZ 18415 96351 and T2021B at NZ 18560 90625). However, further survey (two endoscopic inspections) confirmed the likely absence of a bat roost. - Five trees were downgraded from High to Moderate roosting suitability. Therefore, the original assessment can be considered a reasonable worst-case assessment. - Building B4a – supported a common pipistrelle day roost within the original assessment [APP-048]; no roost recorded in 2021. As such, the original assessment can be considered a reasonable worst-case assessment. - Bat boxes at trees T147a and T148a [APP-234] retain roosts. Small increase in numbers (previous peak count of two bats [APP-048] increased to six bats in 2021). Species composition also changed from soprano to common pipistrelle. - Structure B86a (River Coquet Bridge) – supported a soprano pipistrelle day roost of (peak count) two bats [APP-048]; increased in number to a peak count of seven bats in 2021. <p>Other roost sites recorded during the original baseline surveys (B8a, T136a, B84a, B101a and T220a [APP-048]) were not surveyed in 2021.</p>	<p>The 2024 habitat walkover did not record any notable changes or information relating to bats.</p>	<p>The relatively small increases in the number of bats recorded in 2021 for the roosts at trees T147a and 148a and the River Coquet Bridge (B86a) do not change the importance classification of bats detailed in Chapter 9: Biodiversity Part A [APP-048].</p> <p>In addition, the mitigation proposed within the Outline CEMP [REP11-006] remains valid. Notably, this provides for pre-construction walkover and updated surveys (measures S-B5, S-B7 and A-B19), a suitable lighting design (measure S-G5), precautionary working methods during construction near known roosts (measure A-B24), licensing for impacts to known roosts (measure A-B25) and ECoW support for felling of trees with Moderate or High roosting suitability where likely absence of a roost is confirmed (measure A-B34).</p> <p>As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048] remains valid.</p>

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
<p>Badger <i>Meles meles</i></p>	<p>The updated desk study returned 32 records of badger from within 2km of the Order Limits since September 2018. Of these records, 28 were of badgers killed by road traffic accidents. Notably for the Scheme, this includes records at the proposed location of the Wildlife Shieldhill Culvert (Figure 9.2 Ecological Mitigation Plan (Public) Part A [APP-107]), the location of the proposed Highlaws Junction (Existing and Proposed Carriageway Area Within Order Limits Plans - Rev 3 [REP10-009]) where badger exclusion fencing is proposed [APP-107], along the detrunked section of the existing A1 where traffic levels would decrease as a result of the Scheme, at the proposed extension of the existing Bockenfield Culvert where a mammal ledge would be retrospectively installed [APP-107] and to the southwest of Eshott Airfield, where anti-glare fencing (8-Lane screening) is proposed that would help deter wildlife crossing.</p> <p>A badger collision was also recorded along the existing A1 to the north of Warreners House [REP10-009], where currently there is no specific badger mitigation (such as fencing proposed as part of the Scheme).</p> <p>None of the records pertained to the presence of a badger sett. Of the two badger records confirmed to represent live badger, one record was in Morpeth approximately 1.8km southeast of the Scheme and a second was within Eshott Airfield. As detailed above, badger mitigation is incorporated into Part A near Eshott Airfield.</p>	<p>A badger walkover survey was completed by the Applicant between May and June 2022. The survey covered the Order Limits plus a 30m buffer.</p> <p>A range of field signs were reported throughout the study area including latrines, feeding signs and setts indicating widespread use of the site with localised centres of activity within active territories. This validates the previous understanding of badger presence and distribution generally in the local area of the Scheme.</p> <p>Two new setts and two potential setts were recorded during the 2022 walkover. Due to the sensitivities associated with badger information, exact locations have been omitted from this document. Two of the new confirmed/potential setts were located outside the Order Limits, but may be subject to fragmentation impacts. Two of the confirmed/potential setts are predicted to be retained, but may be subject to temporary disturbance during construction.</p>	<p>The 2024 habitat walkover recorded additional evidence of badger (shown as target notes on Figure 3). These included:</p> <ul style="list-style-type: none"> ▪ TN1 - Badger sett with visible mammal path and snuffle holes (approximately 300m outside the Order Limits). ▪ TN2 - Badger entrance with visible mammal paths (approximately 300m outside the Order Limits). ▪ TN3 - Fresh badger latrines. ▪ TN4 - Potential badger sett entrance (within the Order Limits but sett plus 30m exclusion falls within an area of retained habitat). Overgrown with bramble around entrance and small spoil heap – potentially not in current use. ▪ TN5 - Badger sett (approximately 150m outside the Order Limits). ▪ TN6 - Old badger latrine. ▪ TN7 – Badger prints. ▪ TN9 – Old badger sett entrance (approximately 70m outside the Order Limits). ▪ TN10 – Badger sett with at least five entrances (sett S21, Badger 2020 Verification Survey Report CONFIDENTIAL [REP1-018]). 	<p>The findings of the updated assessment do not change the importance classification of badger detailed in Chapter 9: Biodiversity Part A [APP-048].</p> <p>In addition, the mitigation proposed within the Outline CEMP [REP11-006] remains valid (measures S-B6, S-B15, A-B2, A-B8, A-B10, A-B11, A-B26, A-B37, A-B47). Notably, this includes pre-commencement walkover surveys and incorporation of mammal crossing points and exclusion fencing within the Scheme design. Measure A-B47 also includes the monitoring of badger road casualties along Part A over the five-year period following construction, and the consideration for additional/alternative fencing. Buffer zones during construction are proposed in relation to the new confirmed or potential setts identified during the 2022 survey. Potential for disturbance would be avoided or reduced in accordance with existing mitigation (namely measure A-B37).</p> <p>As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048] remains valid.</p>

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
Barn owl <i>Tyto alba</i>	<p>The updated desk study included three records of barn owl since September 2018. One of the records related to the known barn owl Active Breeding Site at BO32 (Appendix 9.12 Barn Owl Report Part A [APP-238]). The other two records related to road casualties along the existing A1 (including one along what would become the de-trunked section of the A1).</p>	<p>The Applicant completed field surveys in 2021 to reassess for potential roost and nesting sites.</p> <p>Two features, where no evidence of barn owl was observed during the original survey (Appendix 9.12 Barn Owl Report Part A [APP-238]), were recorded as roost/nest sites in 2021. This included:</p> <p>BO11 (an ash tree with a large hole in the trunk) – Potential Nest Site (evidence of barn owl). Located at NZ 18203 92292, on the Order Limits boundary adjacent to an access track.</p> <p>BO31 (a sycamore tree with a large trunk cavity) – Active Roost Site (single barn owl observed exiting). Located at Causey Park, NZ 18880 94697.</p>	<p>The 2024 habitat walkover did not record any notable changes or information relating to barn owl.</p>	<p>The 2021 survey completed by the Applicant identified two additional barn owl nest/roost sites within trees. Both trees are to be retained by the Scheme, but there is potential for temporary disturbance during construction.</p> <p>The Outline CEMP [REP11-006] includes mitigation in relation to the temporary disturbance of retained barn owl nest/roost sites. This includes the implementation of protection zones and seasonal timing of activities within proximity to barn owl roost and nest sites (measure A-B28).</p> <p>Overall, the findings of the updated assessment do not change the importance classification of barn owl or the impact assessment detailed in Chapter 9: Biodiversity Part A [APP-048].</p> <p>As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048] remains valid.</p>
Breeding and Wintering Birds	<p>The updated desk study returned an additional 60 records of birds within 2km of the Order Limits since September 2018. The new records relate to 47 species, all of which were assessed as part of the original baseline assessment [APP-048].</p> <p>A total of 41 of the records did not have an abundance value (number of birds) attributed. The remainder were of one or two birds, with the exception of two mallard <i>Anas platyrhynchos</i> records of 4 and 20+ birds respectively.</p> <p>The numbers and distribution of birds within the additional desk study records remains comparable to the original baseline assessment [APP-048].</p>	<p>No additional surveys have been completed in relation to breeding or wintering birds.</p>	<p>The 2024 habitat walkover did not record any notable changes or information relating to birds.</p>	<p>No changes were identified Therefore, the importance classification, impact assessment and the significance of effect in relation to breeding and wintering birds detailed in Chapter 9: Biodiversity Part A [APP-048] remains the same.</p>

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
Reptiles	The update desk study did not return any new records of reptiles since original baseline assessment.	No additional surveys have been completed since the original baseline assessment, which concluded no anticipated impacts to reptiles [APP-048].	A large hibernaculum (as detailed above in relation to GCN) was noted within the Survey Area (shown as TN8 on Figure 3), although outside the Order Limits. The 2024 habitat walkover did not however record any notable changes or information in relating to reptiles.	No changes were identified Therefore, the findings of the updated assessment do not change the importance classification of reptiles, the impact assessment or the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048].
Red squirrel <i>Sciurus vulgaris</i>	The updated desk study returned four new records of red squirrel since September 2018. Three of the records were within Morpeth, approximately 1.5km south of the Scheme. The final record was approximately 400m east of the Order Limits, within an open arable field that was poorly connected to the Order Limits. Given the distance and lack of connectivity, the area within the Order Limits is not considered to offer functional habitat to the red squirrel populations associated with the four records.	An updated habitat suitability and visual survey for red squirrel was undertaken between May and June 2022. Evidence of squirrel was recorded during the 2022 survey in woodlands WA33, WA50 and WA80, where no evidence was recorded during the original assessment (with reference to Appendix 9.16 Red Squirrel Survey Report Part A [APP-242]). However, it should be noted that these signs were not confirmed to be red squirrel and may represent grey squirrel.	The 2024 habitat walkover did not record any notable changes or information relating to red squirrel.	The updated assessment did not identify an increased distribution or abundance of red squirrel within the Order Limits that would change the importance classification detailed in Chapter 9: Biodiversity Part A [APP-048], The Outline CEMP [REP11-006] includes a pre-commencement inspection by the Ecological Clerk of Works (ECoW) and mitigation in relation to tree felling within woodland where red squirrels are known to be present measures (A-B20 and A-B21). Overall, the findings of the updated assessment do not change the impact assessment in Chapter 9: Biodiversity Part A [APP-048]. As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048] remains valid.
Otter <i>Lutra lutra</i> and water vole <i>Arvicola amphibius</i>	No additional records of otter and water vole were identified during the updated desk study.	The Applicant completed an updated otter and water vole survey of watercourses crossed by the Scheme, where accessible, in May and June 2022. Watercourse names detailed below correspond to Appendix 9.17 Water Vole and Otter Survey Report Part A [APP-243]. Due to access limitations, surveys could not be undertaken for Back Burn (A1), River Coquet	The 2024 habitat walkover did not record any notable changes or information relation to otter. The 2024 habitat walkover identified a single mammal burrow was recorded along unnamed ditch (A18) [APP-243] (shown as TN11 on Figure 3). However, there was no other	The Outline CEMP [REP11-006] includes a pre-commencement inspection of watercourses crossed by the Scheme (measure A-B17) for otter. This inspection would also include water vole as good practice. In addition, wildlife fencing (measure A-B2) and appropriate culvert design/crossing points (measures A-B8, A-B10 and A-

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
		<p>(A3), Tributary of Thirston Burn (A4), un-named ditch (A18) and Fenrother Burn (A26).</p> <p>Otter field signs were recorded on Longdike Burn, including a potential resting place (NZ 18075 96703) and a spraint (NZ 18022 96880). Original baseline surveys of Longdike Burn found high levels of otter activity. The potential resting place recorded in 2022 is located on the boundary of the Order Limits within an area of woodland to be retained.</p> <p>No field signs of water vole were recorded on any surveyed watercourse in 2022. A single potential mink scat was recorded on the Earsdon Burn upstream of Causey Park Bridge in 2022, with similar findings also recorded during the original baseline surveys [APP-243].</p>	<p>evidence to attribute this to water vole, and the mammal burrow was considered more likely to represent rat.</p>	<p>W9) have also been incorporated into the Scheme in consideration of otter.</p> <p>Overall, the findings of the updated assessment do not change the importance classification of otter and water vole, the impact assessment or the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048].</p>
Fish	No new desk study records of protected fish species were returned by the updated desk study.	No additional surveys have been completed since the original baseline assessment [APP-048].	The 2024 habitat walkover did not record any notable changes or information relating to fish.	No changes were identified. Therefore, the importance classification, impact assessment and the significance of effect in relation to fish detailed in Chapter 9: Biodiversity Part A [APP-048] remains the same.
White-clawed crayfish <i>Austropotamobius pallipes</i>	No new desk study records of white-clawed crayfish were returned by the updated desk study.	No additional surveys have been completed since the original baseline assessment [APP-048].	The 2024 habitat walkover did not record any notable changes or information relating to white-clawed crayfish.	No changes were identified. Therefore, the importance classification, impact assessment and the significance of effect in relation to white-clawed crayfish detailed in Chapter 9: Biodiversity Part A [APP-048] remains the same.
Aquatic macroinvertebrates	No records of aquatic macroinvertebrates were returned by the updated desk study.	No additional surveys have been completed since the original baseline assessment [APP-048].	The 2024 habitat walkover did not record any notable changes or information relating to aquatic macroinvertebrates.	No changes were identified. Therefore, the importance classification, impact assessment and the significance of effect in relation to aquatic macroinvertebrates detailed in Chapter 9: Biodiversity Part A [APP-048] remains the same.
Terrestrial invertebrates	The updated desk study returned 41 additional records of terrestrial invertebrate since September 2018. Of these 41 species, 35 species were recorded during the original baseline surveys (Appendix 9.19 Terrestrial	No additional surveys have been completed since the original baseline assessment [APP-048].	The 2024 habitat walkover did not record any notable changes or information relating to terrestrial invertebrates.	As detailed within Chapter 9: Biodiversity Part A [APP-048] , the expanse of sub-optimal habitat within the Order Limits is of value to a common terrestrial invertebrate assemblage only. Even when considering the additional

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
	<p>Invertebrate Survey Report Part A [APP-245] and included within the impact assessment presented in Chapter 9: Biodiversity Part A [APP-048].</p> <p>Of the six new species, only three species were notable and listed as Species of Principal Importance (SPI) in accordance with the Natural Environment and Rural Communities (NERC) Act 2006. These included:</p> <ul style="list-style-type: none"> - Small square-spot moth <i>Diarsia rubi</i>; single individual, approximately 1.9km south of the Order Limits; - White-letter hairstreak butterfly <i>Satyrrium w-album</i>; single individual, approximately 100m from the Order Limits near the access road from Felton, although approximately 700m from areas of proposed habitat loss; and - Green-brindled crescent moth <i>Allophyes oxyacanthae</i>; three records at the same location, peak of two individuals, approximately 300m from the Order Limits near the access road from Felton, although approximately 850m from areas of proposed habitat loss. 			<p>three notable species, the importance of the terrestrial invertebrate assemblage remains the same [APP-048]. The additional species identified during the updated desk study would not change the impact assessment or the mitigation proposals within the Outline CEMP [REP11-006] (measure S-B2 that details the benefits of the landscape mitigation masterplan in relation to terrestrial invertebrates).</p> <p>As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048] remains valid.</p>
Brown hare <i>Lepus europaeus</i>	The updated desk study returned an additional six records of brown hare since September 2018. None of the records were within the Order Limits. The nearest record was approximately 100m of the Order Limits, located within an adjacent arable field.	No surveys have been completed since the Examination.	The 2024 habitat walkover did not record any notable changes or information relating to brown hare.	The additional desk study records validate the understanding of the presence and distribution of brown hare within the original assessment. Therefore, the importance classification, impact assessment and the significance of effect in relation to brown hare detailed in Chapter 9: Biodiversity Part A [APP-048] remains the same.
Hedgehog <i>Erinaceus europaeus</i>	The updated desk study returned an additional 18 records of hedgehog since September 2018. Of these records, three were of hedgehog observed dead along the A1. The three records were	No surveys have been completed since the Examination.	The 2024 habitat walkover did not record any notable changes or information relating to hedgehog.	The additional desk study records validate the understanding of the presence and distribution of hedgehog within the original assessment. The importance classification, impact

Species /species group	Updated desk study records	Survey data collected since Examination	2024 Habitat Walkover Survey	Changes to ES and/or Examination Information
	<p>four-figure grid references and therefore only accurate to 1km. However, two of the records were clearly outside the Order Limits. The grid reference of the third would suggest this was located along the section of the A1 to be detrunked by the Scheme.</p> <p>The closest living record of a hedgehog to the Order Limits was returned in 2021 and was approximately 80m east of the Order Limits near Felmoor.</p>			<p>assessment and the significance of effect in relation to hedgehog detailed in Chapter 9: Biodiversity Part A [APP-048] remains the same.</p>
<p>Invasive non-native species (INNS)</p>	<p>The updated desk study returned an additional six records of INNS of plant since September 2018. These six records were of the following species: giant hogweed <i>Heracleum mantegazzianum</i>, rhododendron <i>Rhododendron ponticum</i> (3 records), giant-rhubarb <i>Gunnera manicata</i>, and variegated yellow archangel <i>Lamium galeobdolon subsp. argentatum</i>. The closest of these to the Order Limits was one of the rhododendron records, which was approximately 170m east of the Order Limits. However, it should be noted that the grid references were only accurate to four-digits, representing a 11m grid square (and therefore the records may be found within the Order Limits).</p> <p>Additional records for grey squirrel and signal crayfish were also included within the updated desk study, although do not change the information presented in Chapter 9: Biodiversity Part A [APP-048] in relation to these species.</p>	<p>No surveys have been completed since the Examination.</p>	<p>The 2024 habitat walkover did not record any notable changes or information relating to INNS.</p>	<p>The updated desk study records indicate the potential for additional locations where INNS of plant may be present within the Order Limits. However, the proposed mitigation already provides for the completion of a pre-commencement walkover survey to confirm the presence/absence of INNS and, where required, implementation of a Biosecurity Method Statement (measures S-B8 and S-B13 of the Outline CEMP [REP11-006]).</p> <p>Therefore, overall, the impact assessment and the significance of effect in relation to INNS detailed in Chapter 9: Biodiversity Part A [APP-048] remains the same.</p>

4. RESULTS – PART B

4.1. DESIGNATED SITES

- 4.1.1. No additional statutory or non-statutory designated sites were identified during the desk study in comparison to those assessed within **Chapter 9: Biodiversity Part B [APP-049]**. Therefore, the impact assessment and significance of effect detailed within **Chapter 9: Biodiversity Part B [APP-049]** in relation to designated sites remains the same.

4.2. HPI AND ANCIENT WOODLAND

- 4.2.1. No additional areas of HPI or ancient woodland were identified during the desk study in comparison to those assessed within **Chapter 9: Biodiversity Part B [APP-049]**. Therefore, the impact assessment and significance of effect detailed within **Chapter 9: Biodiversity Part B [APP-049]** in relation to HPI and ancient woodland remains the same.

4.3. HABITAT WALKOVER

- 4.3.1. Full details of the habitats originally recorded within the Order Limits for Part B are detailed in **Chapter 9: Biodiversity Part B [APP-049]**.
- 4.3.2. The original baseline assessment identified that the majority of the Order Limits for Part B comprised arable farmland (c. 54%), poor semi-improved grassland (c. 6%) and improved grassland (c. 25%) of low conservation importance. Some HPI were present within the Order Limits including deciduous woodland (c. 2%).
- 4.3.3. The 2023 habitat verification survey identified habitats to be largely unchanged since the original baseline assessment, with the majority of the Order Limits continuing to represent agricultural land. Similar to that recorded for Part A, there were areas of land use change where arable fields had changed use to improved grasslands used for grazing (or visa versa). However, the ecological value and importance of these habitats remains the same.
- 4.3.4. There were some areas previously identified as plantation woodlands that have since been felled, although this does not adversely affect the impact assessment or significance of effects. An area of broadleaved semi-natural woodland at the northern end of Part B (grid reference NU 17106 21924) appears to have a number of fallen trees, potentially as a result of storm damage. However, the overall habitat type remains the same.
- 4.3.5. A few relatively small patches of semi-natural habitats (<0.1 ha) had succeeded for example from tall ruderal or grassland habitats to small areas of scrub. However, the ecological value and importance of these habitats remains the same.
- 4.3.6. Habitat areas updated during the 2023 verification survey are identified in bold on **Figure 4**. Overall, the findings of the updated assessment do not change the importance classification of habitats within the Order Limits, the impact assessment or the significance of effect detailed in **Chapter 9: Biodiversity Part B [APP-049]**.

4.4. PROTECTED/NOTABLE SPECIES

- 4.4.1. Full details of the findings of the original baseline assessment are detailed in **Chapter 9: Biodiversity Part B [APP-049]. Table 4-1** below provides a summary of the updated 2023/24 assessment in relation to protected/notable species. This includes the results of the updated desk study, a summary of any additional survey data collected since the Examination and any pertinent information collected during the 2023 walkover. The table also summarises any changes, where appropriate, to the original baseline information presented within the DCO documentation.

Table 4-1 – Part B Updated Protected / Notable Species Results (Desk Study and Field)

Species / species group	Updated desk study records	Survey data collected since Examination	2023 Habitat Walkover Survey	Changes to ES and/or Examination Information
Great crested newt (GCN)	The updated desk study included a single additional record since September 2019 (original desk study). The record was located approximately 1.46km south of the Lionheart Enterprise Compound. Due to the distance between the record and the Order Limits, there is no functional link between the Scheme and the GCN population.	No additional surveys have been completed since the original baseline assessment [APP-049].	The 2023 habitat walkover survey did not record any notable changes or information relating to GCN.	No changes were identified. Therefore, the importance classification, impact assessment and the significance of effect in relation to GCN detailed in Chapter 9: Biodiversity Part B [APP-049] remains the same.
Bats	<p>The 5km updated desk study returned an additional 72 records of bat since September 2019. Of these 72 records, 33 relate to roosting bats. The species composition remains comparable to the original baseline assessment [APP-049].</p> <p>The nearest roost records were approximately 500m to the northeast of the Order Limits at Charlton Hall (from 2020). This included a maternity roost of soprano pipistrelle and day roosts of common pipistrelle and brown long-eared bats.</p> <p>No additional granted EPS licences for bats were identified within 5km of the Order Limits.</p>	<p>An updated assessment and surveys of buildings/structures and trees, where accessible, was completed in May and September 2021 in relation to mitigation measure S-B7 of the Outline CEMP [REP11-006]. The following notable findings were recorded (with reference to potential for changes to the impact assessment):</p> <ul style="list-style-type: none"> - 20 trees downgraded in roosting suitability. Therefore, the original assessment can be considered a reasonable worst-case assessment. - Within the original assessment, the Charlton Mires complex of buildings (B6A to B6N, B7, C1 and C2; Appendix 9.5 Bat Report Part B [APP-302]) Supported a total of eight separate non-breeding summer common pipistrelle roosts within B6C, B6K and B6M, comprised of less than five individual bats in a single roost [APP-049]. <ul style="list-style-type: none"> o Single brown-long eared bat recorded emerging from building complex in 2021 (new roost). o Building B6K supported a non-breeding summer roost of common pipistrelle (peak count of two bats) within the original assessment (Appendix 9.5 Bat Report Part B [APP-302]). No roost recorded during surveys undertaken in 2001. As such, the original assessment can be 	<p>The original assessment recorded a number of bat boxes within a woodland block at the northern end of Part B (Figure 9.13 Bat Box Locations Part B [APP-165]). These bat boxes supported 12 bat roosts, including roosts of Regional importance [APP-049].</p> <p>It was noted during the 2023 walkover that a number of trees had fallen within the woodland, including at least one tree supporting a bat box. The 2021 survey undertaken by the Applicant did not record any fallen trees within the woodland. Therefore, the trees are likely to have fallen after September 2021. The fallen trees were suspected to be as a result of storm damage (experienced in the months prior to the 2023 assessment).</p> <p>The 2023 habitat walkover did not record any further notable changes or information relating to bats.</p>	<p>As detailed in the <i>Survey data collected since Examination</i> column, the original assessment recorded a number of bat roosts within the Charlton Mires building complex. The 2021 bat surveys undertaken by the Applicant recorded changes in roost types (including a new brown long-eared bat roost; single bat) at the Charlton Mires building complex. The building complex at Charlton Mires would be demolished as part of the Scheme and therefore the roosts lost. The new roost (single brown-long-eared bat, day/summer roost) does not change the importance classification of the bat assemblage as detailed in Chapter 9: Biodiversity Part B [APP-049]. In addition, the mitigation proposed within the Outline CEMP [REP11-006] includes obtaining an EPS Licence for all bat roosts to be lost or disturbance during the construction of Part B (measure B-B15).</p> <p>Should the suspected storm damage have resulted in the loss of any roosts located within the woodland block at the northern end of Part B, the original assessment can be considered a reasonable worst-case assessment in relation to impacts and effects.</p>

Species / species group	Updated desk study records	Survey data collected since Examination	2023 Habitat Walkover Survey	Changes to ES and/or Examination Information
		considered a reasonable worst-case assessment.		Overall, as the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part B [APP-049] remains valid.
Badger	The updated desk study returned an additional four records of badger since September 2019. All four records were of badger road casualties recorded along the existing A1, although only two were located within the Order Limits for Part B; at the location of the proposed Charlton Mires Junction [REP10-009].	A badger walkover survey was completed by the Applicant between May and June 2022. The survey covered the Order Limits plus a 30m buffer. No setts or confirmed badger signs were recorded in 2022, although significant land access constraints were noted.	The 2023 habitat walkover did not record any notable changes of information in relating to badger.	The findings of the updated assessment do not change the importance classification of badger or the impact assessment detailed in Chapter 9: Biodiversity Part B [APP-049] . In addition, the mitigation proposed within the Outline CEMP [REP11-006] remains valid (measures S-B6, S-B15, B-B8, B-B10, B-B28). Notably, this includes pre-commencement walkover surveys, ECoW monitoring during construction (for new signs of badger) and a Species Protection Plan which will form the basis of a 'toolbox talk' to be given to contractors. As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part B [APP-049] remains valid.
Barn owl	The updated desk study included a single new barn owl record since September 2019; a roost located approximately 400m to the northeast of the Order Limits.	The Applicant completed field surveys in 2021 to reassess for potential roost and nesting sites. No changes to the original baseline survey (Appendix 9.7 Barn Owl Survey Report Part B [APP-305]) were recorded.	The 2024 habitat walkover did not record any notable changes or information relating to barn owl.	Due to the distance between the barn owl roost record (as identified in the updated desk study) and the Order Limits, direct or indirect impacts to the roost are not predicted as a result of the Scheme. In addition, this additional record would not change the importance of the barn owl population as detailed in Chapter 9: Biodiversity Part B [APP-049] . As the importance classification, potential impacts and mitigation and compensation measures remain the same, the significance of effect in

Species / species group	Updated desk study records	Survey data collected since Examination	2023 Habitat Walkover Survey	Changes to ES and/or Examination Information
				relation to barn owl detailed in Chapter 9: Biodiversity Part B [APP-049] remains valid.
Breeding and Wintering Birds	<p>The updated desk study returned an additional 617 records of birds within 2km of the Order Limits since September 2019. These new records relate to 68 species.</p> <p>The species and number and distribution of birds within the additional desk study records remains comparable to the original baseline assessment [APP-049].</p>	No additional surveys have been completed in relation to breeding or wintering birds.	The 2023 habitat walkover did not record any notable changes or information relating to birds.	The importance classification, impact assessment and the significance of effect in relation to breeding and wintering birds detailed in Chapter 9: Biodiversity Part B [APP-049] remains the same.
Reptiles	The updated desk study returned a single additional record of a reptile since September 2019; a slow worm <i>Anguis fragilis</i> , recorded approximately 1.9km northwest of the Lionheart Enterprise Compound. Given the distance between the record and the Order Limits, there is no functional connection.	No additional surveys have been completed since the original baseline assessment [APP-049].	The 2023 habitat walkover did not record any notable changes or information relating to reptiles.	The findings of the updated assessment do not change the importance classification of reptiles, the impact assessment or the significance of effect detailed in Chapter 9: Biodiversity Part A [APP-048] .
Red squirrel	The updated desk study returned an additional three records since September 2019. All three records were within a woodland approximately 1.5km to the northeast of Part B, with relatively poor connectivity to the Order Limits (open agricultural fields with limited hedgerow or tree line connectivity).	<p>An updated habitat suitability and visual survey for red squirrel was undertaken between May and June 2022.</p> <p>Squirrel field signs (a combination of dreys and feeding signs) were recorded in 2022 within woodland WB10 (Figure 9.6 Woodland Survey Locations Part B [APP-158]). No signs of squirrel were recorded within this woodland during the original assessment (Appendix 9.4 Red Squirrel Report Part B [APP-301]). However, it should be noted that these signs were not confirmed to be red squirrel and may represent grey squirrel.</p>	The 2023 habitat walkover did not record any notable changes or information relating to red squirrel.	<p>The updated assessment did not identify an increased distribution or abundance of red squirrel within the Order Limits that would change the importance classification detailed in Chapter 9: Biodiversity Part B [APP-049],</p> <p>The findings of the updated assessment do not change the importance assessment detailed in Chapter 9: Biodiversity Part B [APP-049].</p> <p>In addition, the mitigation proposed within the Outline CEMP [REP11-006] remains valid (measures B-B7, B-B8, B-B9)</p> <p>Notably, this includes pre-commencement inspections prior to any tree felling of woodland known to support squirrel dreys and areas of</p>

Species / species group	Updated desk study records	Survey data collected since Examination	2023 Habitat Walkover Survey	Changes to ES and/or Examination Information
				<p>woodland within 50m of the works/compound boundary. Measure B-B8 also includes a Species Protection Plan which will form the basis of a 'toolbox talk' to be given to contractors.</p> <p>As the importance of the receptor, potential impacts and mitigation and compensation measures remain the same, the significance of effect detailed in Chapter 9: Biodiversity Part B [APP-049] remains valid.</p>
Otter and water vole	<p>The updated desk study returned an additional five records of otter since September 2019, all located along Shipperton Burn at the northern end of Part B. The five records were submitted by the Environment Agency and dated April 2021. These records are understood to be the findings presented to the Applicant and the Examining Authority during the Examination, which informed additional proposals for otter fencing (mitigation; measure ExA: B-B100 of the Outline CEMP [REP11-006]).</p> <p>No additional water vole records were identified during the updated desk study.</p>	<p>The Applicant completed an updated otter and water vole survey of the following watercourses crossed by the Scheme in May and June 2022: Denwick Burn (B8), White House Burn (B9), unnamed ditch at Charlton Mires (B2) and Shipperton Burn (B1).</p> <p>Otter were recorded as present on Denwick Burn (spraint recorded), where the original assessment did not record any evidence (Appendix 9.3 Otter and Water Vole Report Part B [APP-300]).</p> <p>No other differences to the original baseline surveys were recorded in relation to otter and no changes were identified with regards to water vole.</p>	<p>The 2023 habitat walkover did not record any notable changes or information relating to otter and water vole.</p>	<p>Whilst the 2022 survey recorded field signs of otter along Denwick Burn, mitigation in the form of otter fencing at this watercourse is proposed (measure ExA: B-B100 of the Outline CEMP [REP11-006]).</p> <p>The findings of the updated assessment do not change the importance classification of otter and water vole, the impacts assessment or the significance of effect concluded during the Examination (detailed in Chapter 9: Biodiversity Part B [APP-049] in relation to water vole and updated during Examination in relation to otter (detailed within the Statement of Common Ground with The Environment Agency - Rev 9 [REP11-010]).</p>
Fish	<p>No new desk study records of protected fish species were returned by the updated desk study.</p>	<p>No additional surveys have been completed since the original baseline assessment [APP-049].</p>	<p>The 2023 habitat walkover did not record any notable changes or information relating to fish.</p>	<p>No changes were identified. Therefore, the importance classification, impact assessment and the significance of effect in relation to fish detailed in Chapter 9: Biodiversity Part B [APP-049] remains the same.</p>
White-clawed crayfish	<p>No new desk study records of white-clawed crayfish were returned by the updated desk study.</p>	<p>No additional surveys have been completed since the original baseline assessment [APP-049].</p>	<p>The 2023 habitat walkover did not record any notable changes or</p>	<p>No changes were identified. Therefore, the importance classification, impact assessment and the significance of effect in relation to fish detailed in</p>

Species / species group	Updated desk study records	Survey data collected since Examination	2023 Habitat Walkover Survey	Changes to ES and/or Examination Information
			information relating to white-clawed crayfish.	Chapter 9: Biodiversity Part B [APP-049] remains the same.
Aquatic macroinvertebrates	No records of aquatic macroinvertebrates were returned by the updated desk study.	No additional surveys have been completed since the original baseline assessment [APP-049].	The 2023 habitat walkover did not record any notable changes or information relating to aquatic macroinvertebrates.	No changes were identified. Therefore, the importance classification, impact assessment and the significance of effect in relation to fish detailed in Chapter 9: Biodiversity Part B [APP-049] remains the same.
Terrestrial invertebrates	The updated desk study returned an additional 58 records of terrestrial invertebrate since September 2019. However, none of the records were located within the Order Limits (nearest approximately 1km to the east).	No surveys have been completed since the Examination.	The 2023 habitat walkover did not record any notable changes or information relating to terrestrial invertebrates.	No changes were identified. Therefore the importance classification, impact assessment and the significance of effect in relation to terrestrial invertebrates detailed in Chapter 9: Biodiversity Part B [APP-049] remains the same.
Invasive non-native plant species (INNS)	The updated desk study included records of giant hogweed and Japanese rose since September 2019, although none were within the Order Limits or a zone of influence. Records of grey squirrel were also contained within the updated desk study, although the species is known to be present from the original assessment.	No surveys have been completed since the Examination.	The 2023 habitat walkover did not record any notable changes or information relating to INNS.	No changes were identified. Therefore, the impact assessment and the significance of effect in relation to INNS detailed in Chapter 9: Biodiversity Part B [APP-049] remains the same. In addition, measure S-B8 and S-B13 of the Outline CEMP [REP11-006] provides for a pre-commencement walkover survey to confirm the presence/likely absence of INNS and, where required, implementation of a Biosecurity Method Statement.

5. CONCLUSIONS

- 5.1.1. The updated desk study identified no additional designated sites or areas of HPI and ancient woodland in comparison to those assessed within **Chapter 9: Biodiversity Part A [APP-048]** and **Chapter 9: Biodiversity Part B [APP-048]**. Therefore, the impact assessments and significance of effect detailed within the chapters in relation to these receptors remains the same⁵.
- 5.1.2. Phase 1 habitats identified during the verification survey (**Figures 3 and 4**) were broadly the same as those identified during the original assessment (**Figure 9.1 Final Phase 1 Plan Part A [APP-105]** and **Figure 9.3 Phase 1 Habitat Survey Part B [APP-155]**). There were no changes that would result in amendments to the impact assessments or the significance of effect detailed in these chapters.
- 5.1.3. A review of updated desk study information, survey data collected since the Examination and information collected during the 2023/2024 habitat walkover survey was undertaken. This found no changes that would result in amendments to the impact assessments or significant of effect detailed within the DCO documentation in relation to protected and notable species.
- 5.1.4. As such, the updated desk study and habitat verification survey confirms that the mitigation and compensation measures outlined within the **Outline CEMP [REP11-006]** remain valid.

⁵ With the exception of impacts and effects associated with air quality for designated sites and ancient woodland for Part A, in accordance with **paragraph 2.2.2**.

6. REFERENCES

Ref. 1 Chartered Institute of Ecology and Environmental Management (CIEEM) (2019). *Advice Note on the Lifespan of Ecological Reports & Surveys*. April 2019. CIEEM, Winchester.

Ref. 2 CIEEM (2017a) *Guidelines for Preliminary Ecological Appraisal*. CIEEM Winchester.

Ref. 3 CIEEM (2017b) *Guidelines for Ecological Report Writing*. CIEEM Winchester.

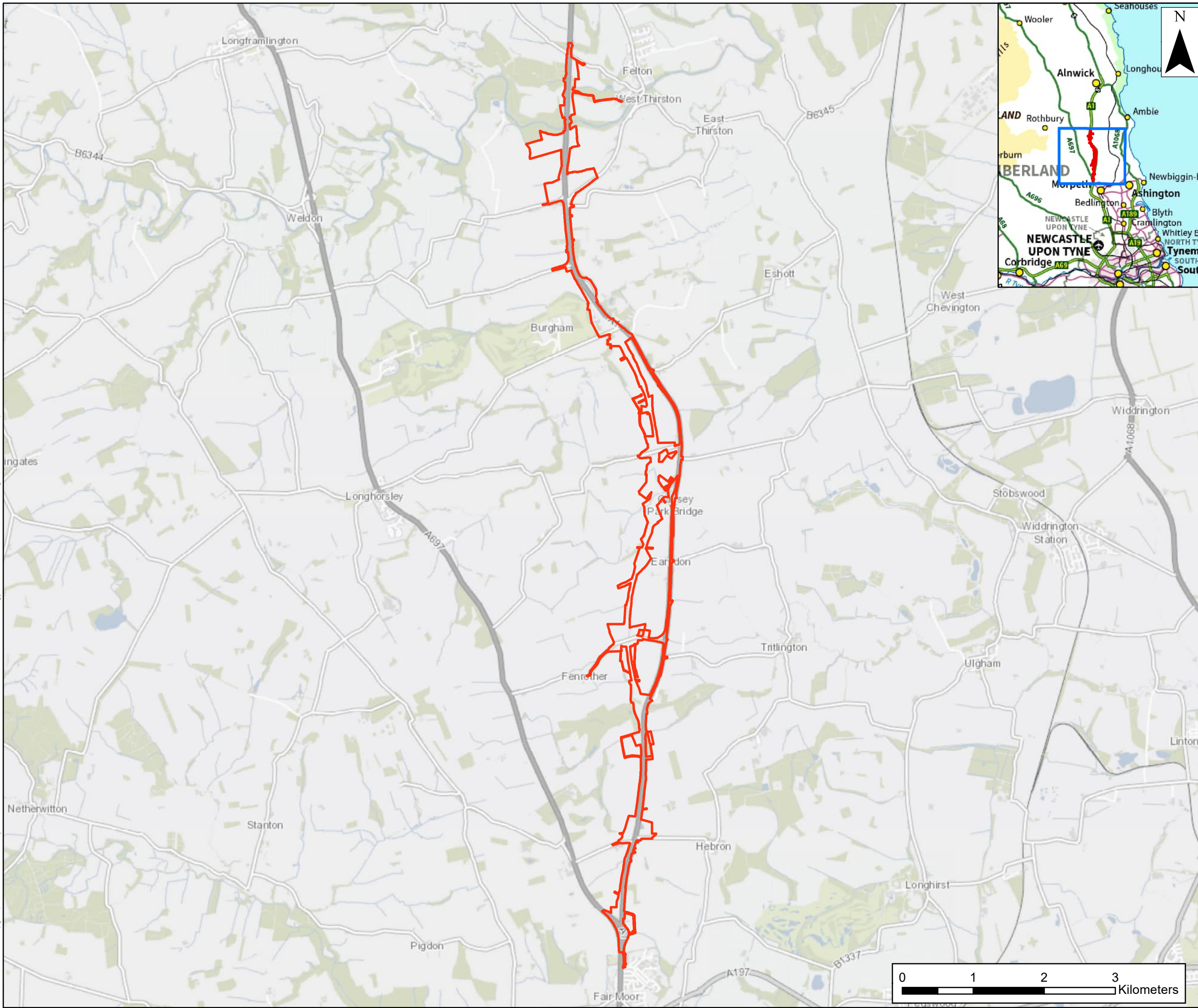
Ref. 4 Department for Environment, Food and Rural Affairs (DEFRA) *Magic Map Application*. Available online at <https://magic.defra.gov.uk/magicmaps.aspx>. Accessed December 2023.

Ref. 5 Joint Nature Conservation Committee (JNCC). (2010). *Handbook for Phase 1 habitat survey – a technique for environmental audit*. JNCC, Peterborough.

Ref. 6 HMSO. (2006). *Natural Environment and Rural Communities Act*. HMSO, Norwich.

Ref. 7 JNCC Biodiversity Reporting and Information Group. (2008). *UK Biodiversity Action Plan*.


7. FIGURES



Key
— Site boundary

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wsp

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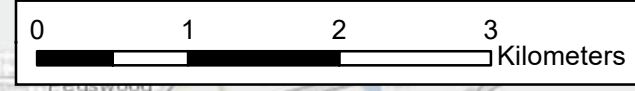
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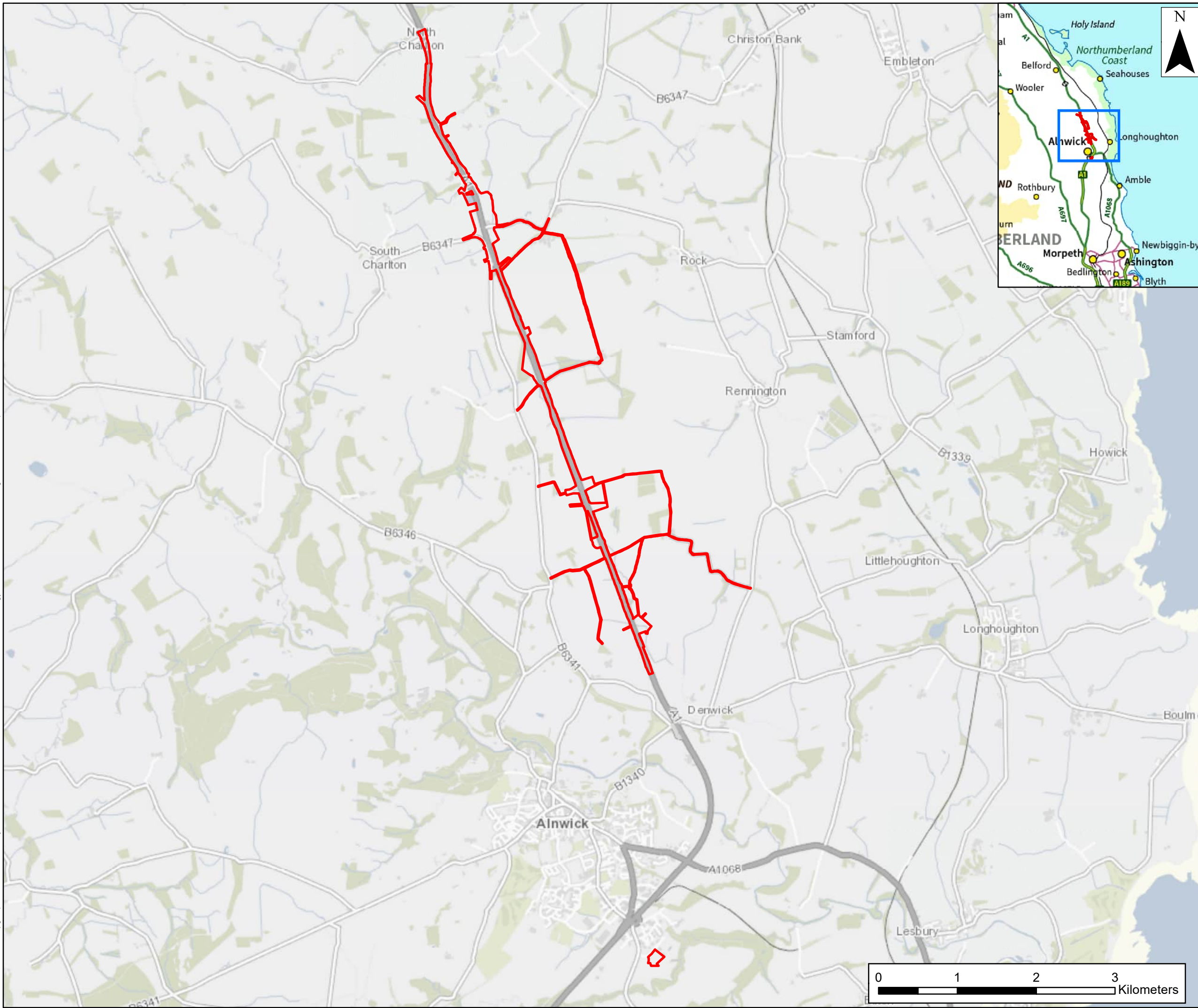
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Key
— Site boundary

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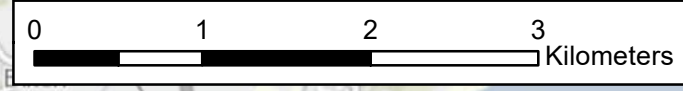
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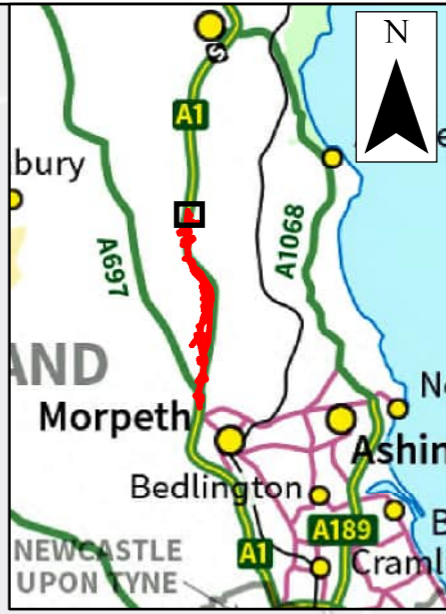
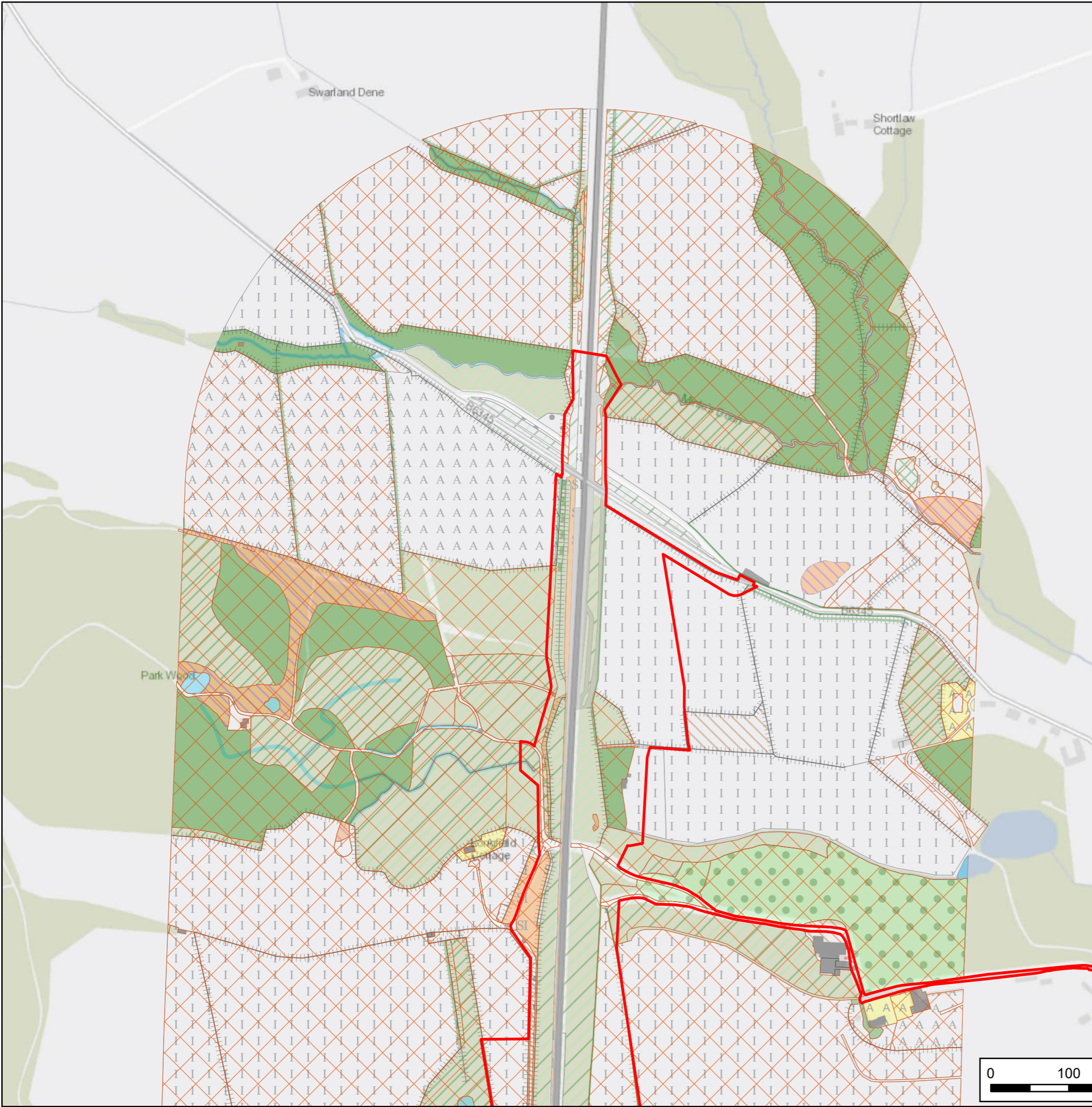
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 Figure 2





Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Coniferous woodland - recently felled
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Defunct hedge - species-poor
- Fence
- Hedge with trees - species-poor
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

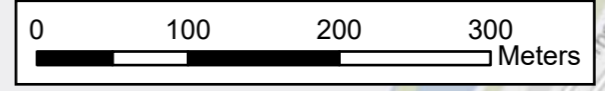
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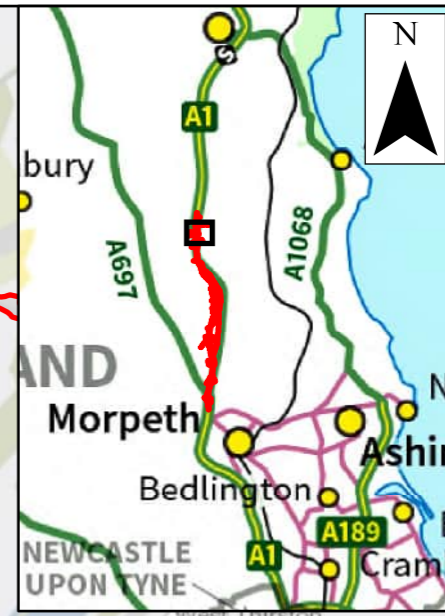
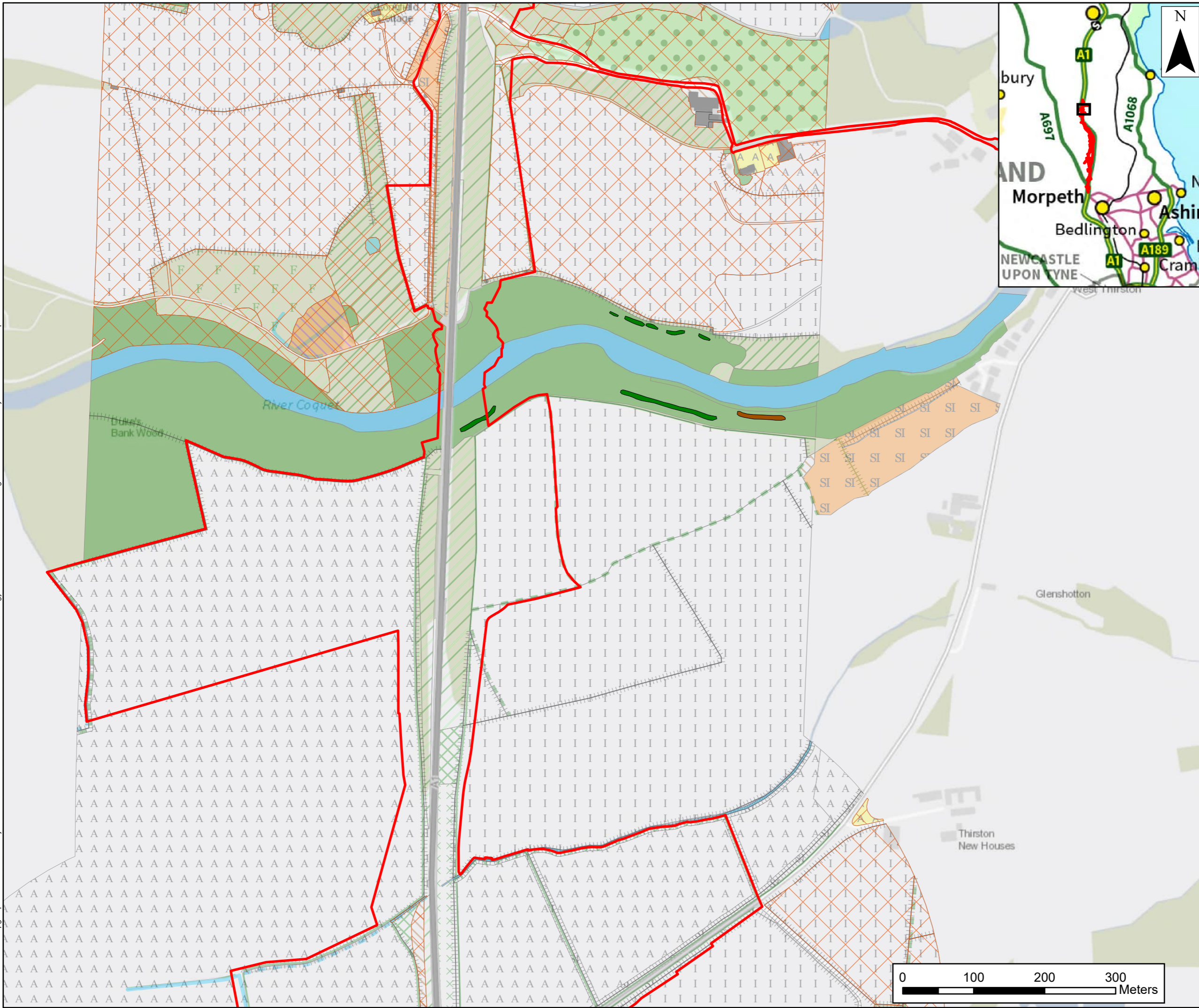
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DRAWING NUMBER: Figure 3 Page 1 of 19





Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Mixed woodland - recently felled
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Bracken - continuous
- Other tall herb and fern - ruderal
- Standing water
- Running water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE:
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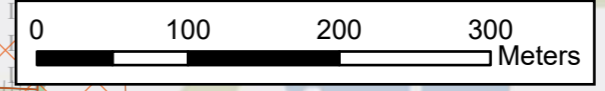
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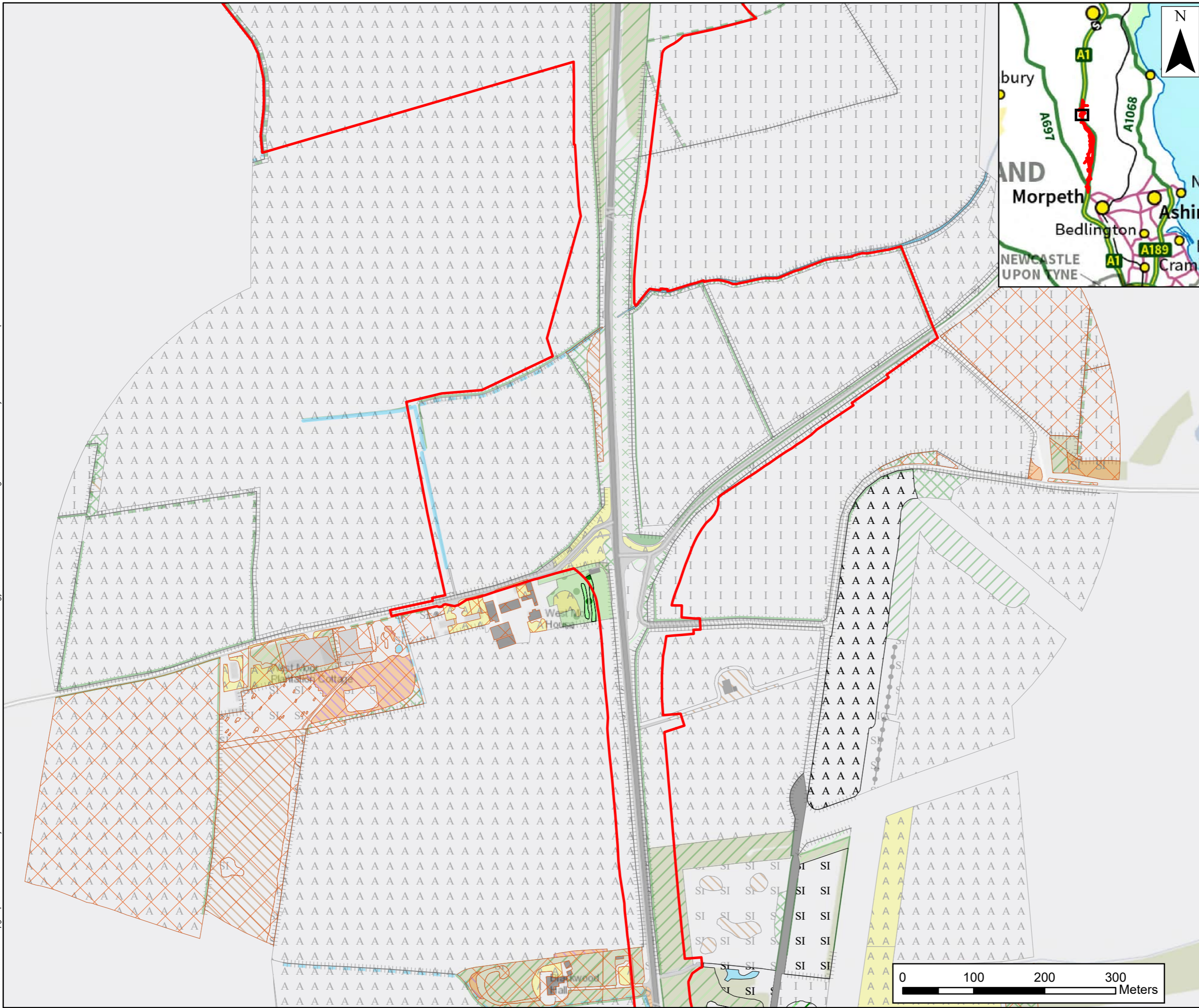
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Figure 3
Page 2 of 19





Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - semi-natural
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Spoil
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water

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Client Name:

PROJECT TITLE:
A1 in Northumberland: Morpeth to Ellingham

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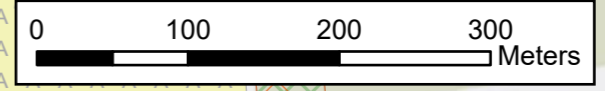
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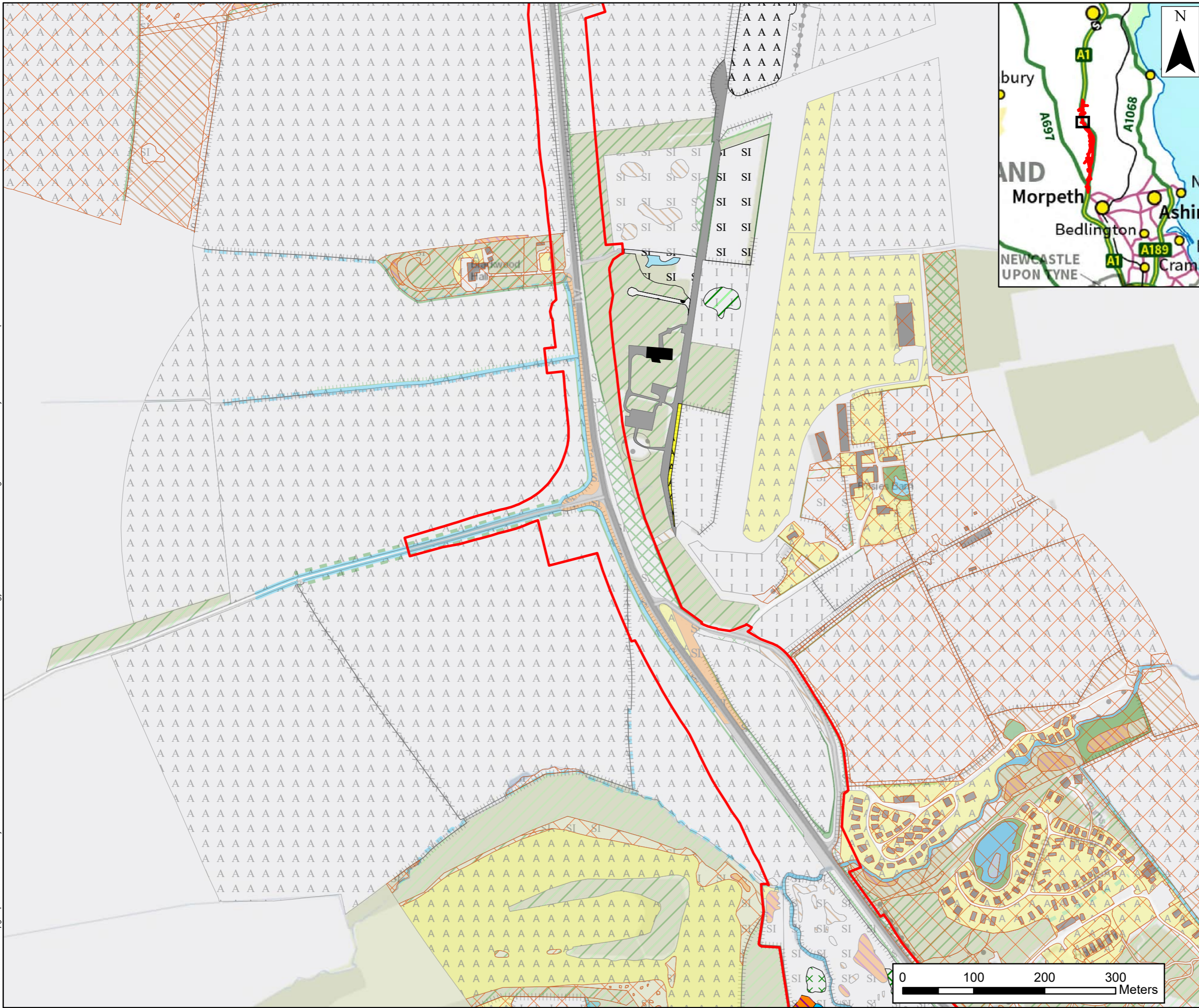
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DATE: 3/6/2024	REVISION: P01
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Figure 3
Page 3 of 19





Key

- Site boundary
- No access

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Boundary removed
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE:
A1 in Northumberland: Morpeth to Ellingham

DRAWING TITLE:
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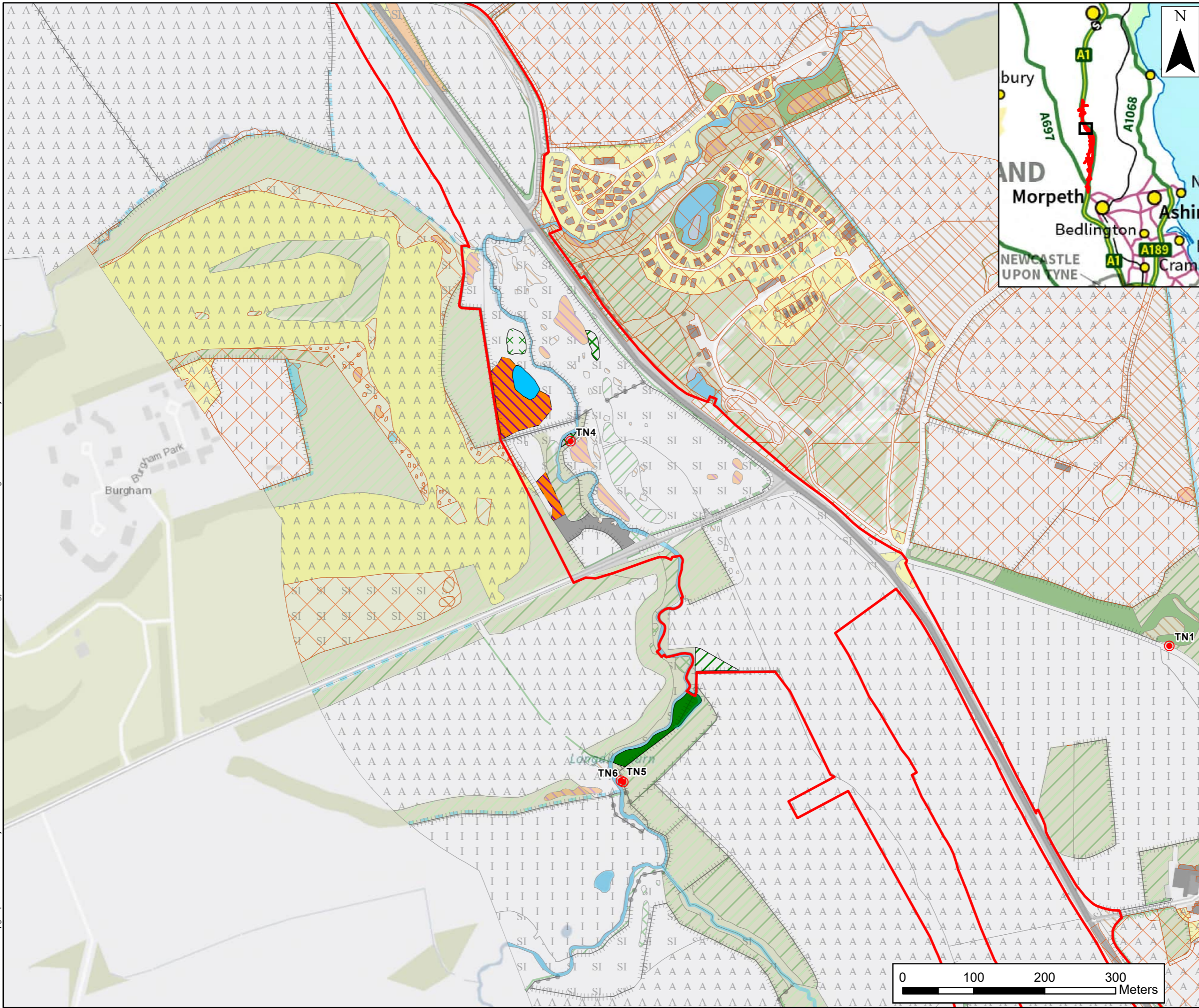
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Figure 3
Page 4 of 19





Key

- Site boundary
- No access
- Target note

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Boundary removed
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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wsp

Client Name: highways england

PROJECT TITLE:
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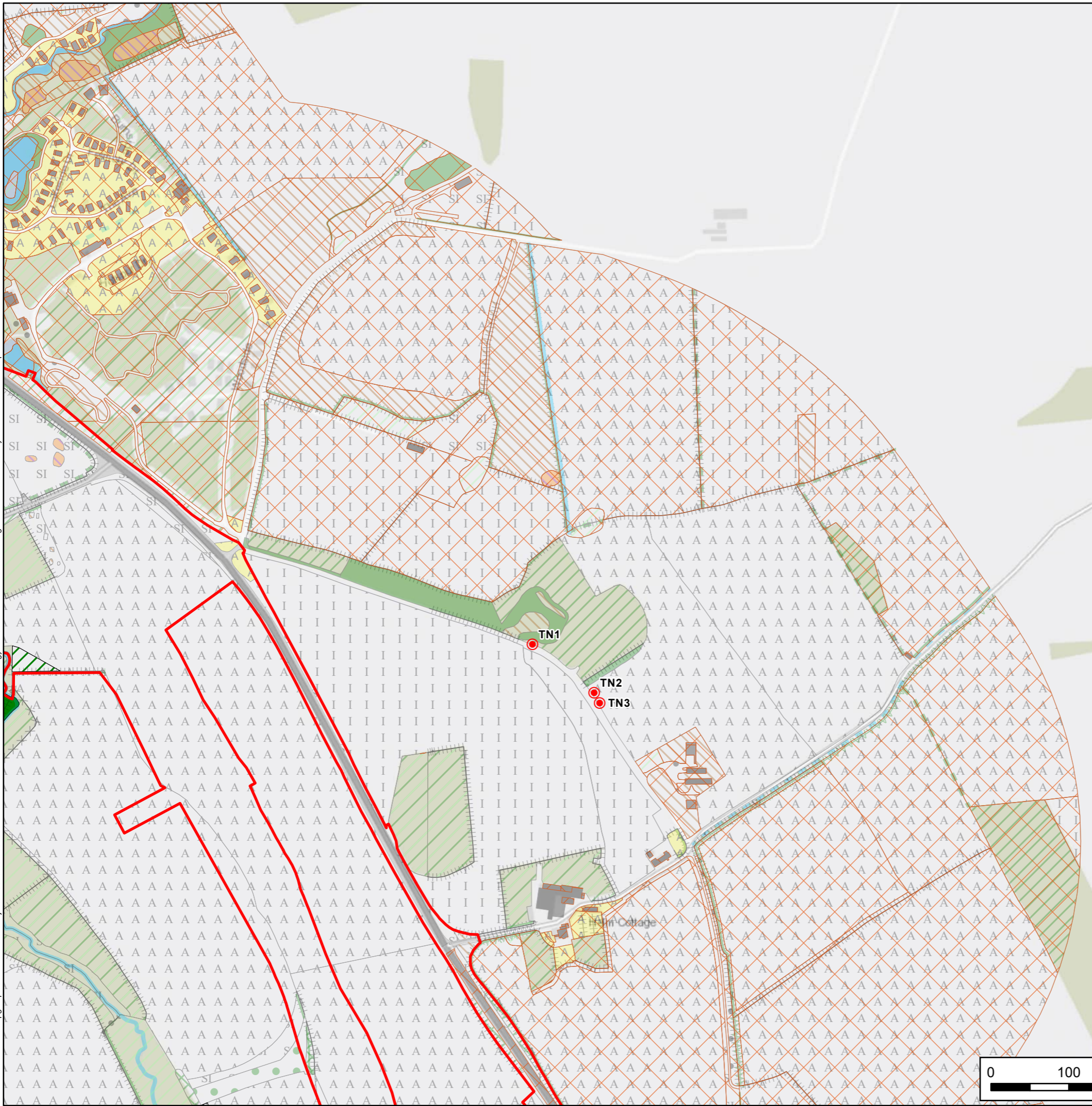
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Figure 3
Page 5 of 19





Key

- Site boundary
- No access
- Target note

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Boundary removed
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- ||||| Fence
- ||||| Hedge with trees - species-poor
- v v v Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE:
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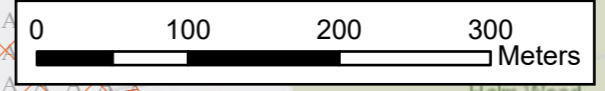
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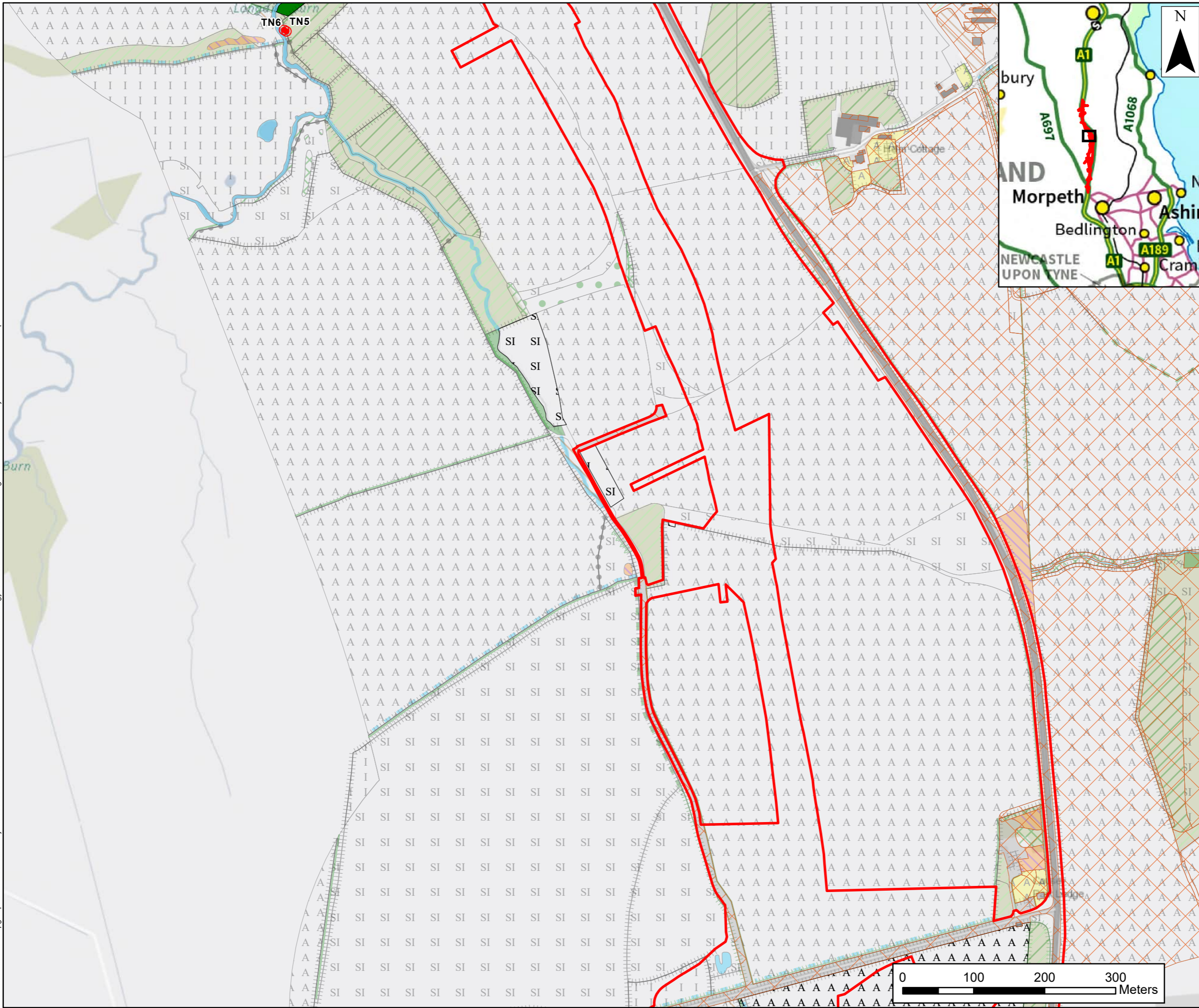
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Figure 3
Page 6 of 19





Key

- Site boundary
- ⊠ No access
- Target note

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- ▨ Broadleaved woodland - plantation
- ▧ Coniferous woodland - plantation
- ▩ Mixed woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- ▭ Improved grassland
- ▮ Marsh/marshy grassland
- ▯ Poor semi-improved grassland
- ▰ Other tall herb and fern - ruderal
- Standing water
- Standing water - eutrophic
- Hard standing
- ▭ Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- ✕ Boundary removed
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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Client Name: **highways england**

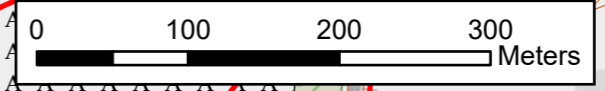
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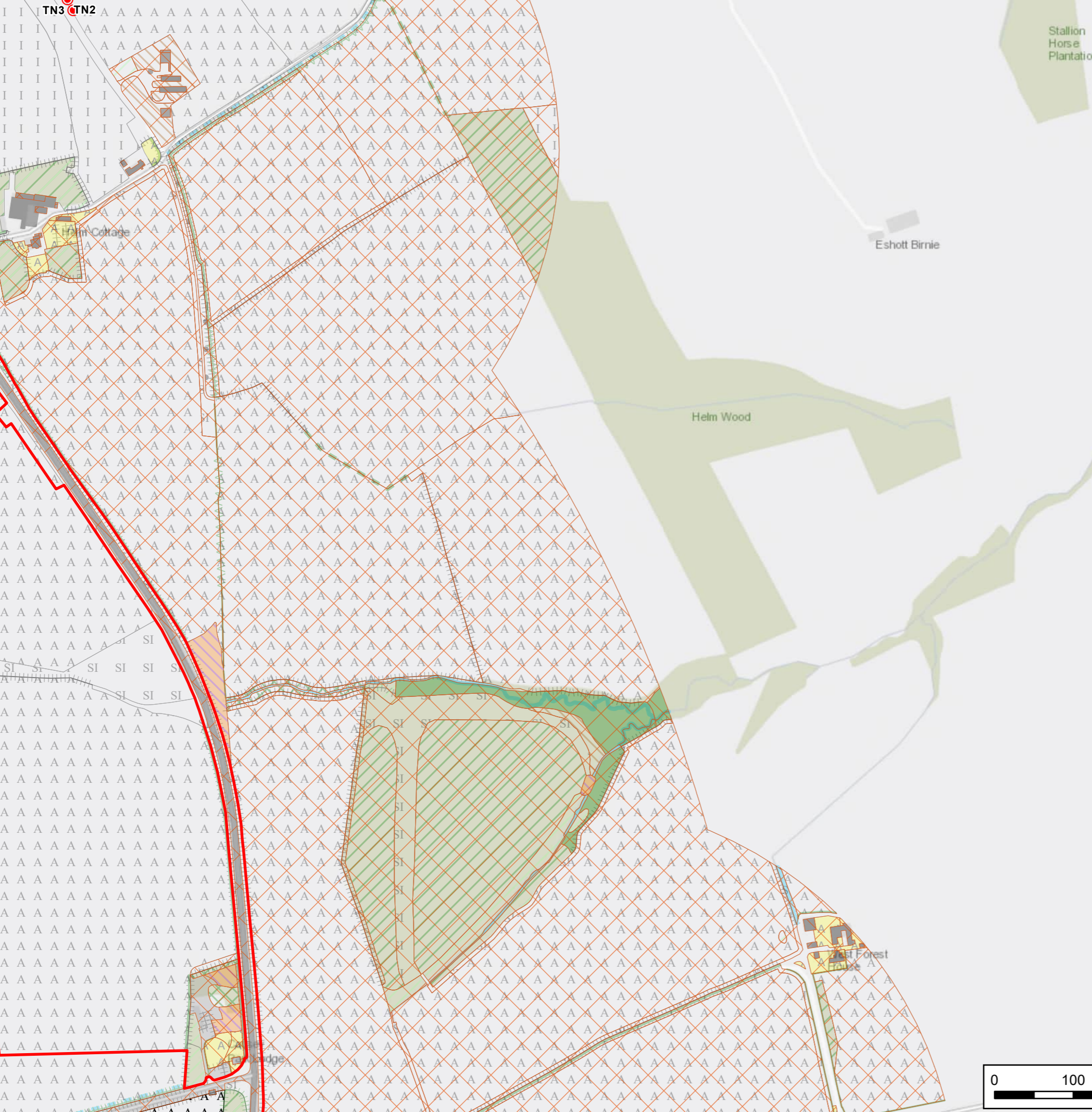
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Page 7 of 19





- Key**
- Site boundary
 - No access
 - Target note
- Phase 1 Habitats**
- Broadleaved woodland - semi-natural
 - Broadleaved woodland - plantation
 - Coniferous woodland - plantation
 - Mixed woodland - plantation
 - Scrub - dense/continuous
 - Improved grassland
 - Marsh/marshy grassland
 - Poor semi-improved grassland
 - Other tall herb and fern - ruderal
 - Standing water
 - Hard standing
 - Cultivated/disturbed land - arable
 - Cultivated/disturbed land - amenity grassland
 - Buildings
 - Bare ground
 - Defunct hedge - species-poor
 - Dry ditch
 - Fence
 - Hedge with trees - species-poor
 - Intact hedge - native species-rich
 - Intact hedge - species-poor
 - Running water
 - Wall

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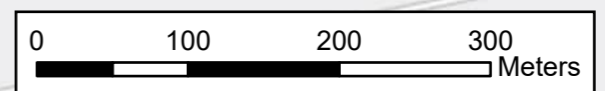
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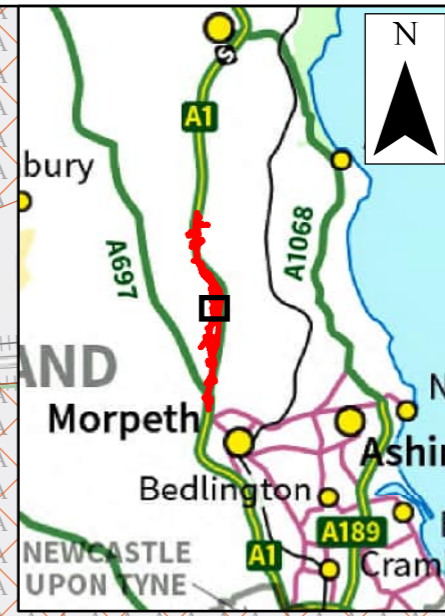
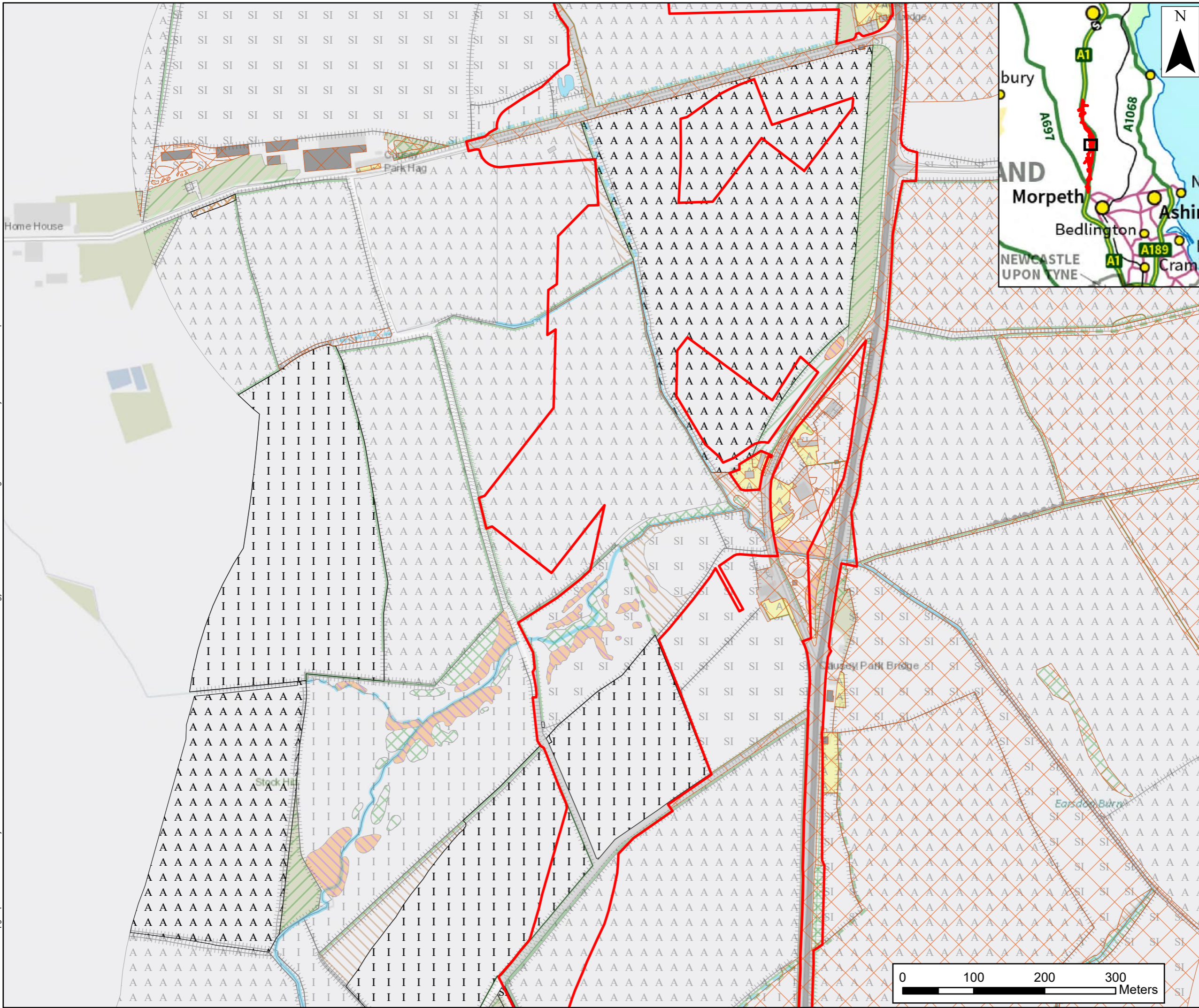
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DRAWING NUMBER: Figure 3 Page 8 of 19





Key

- Site boundary
- No access

Phase 1 Habitats

- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water - eutrophic
- Hard standing
- Spoil
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Introduced shrub
- Buildings
- Bare ground
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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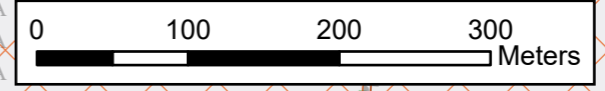
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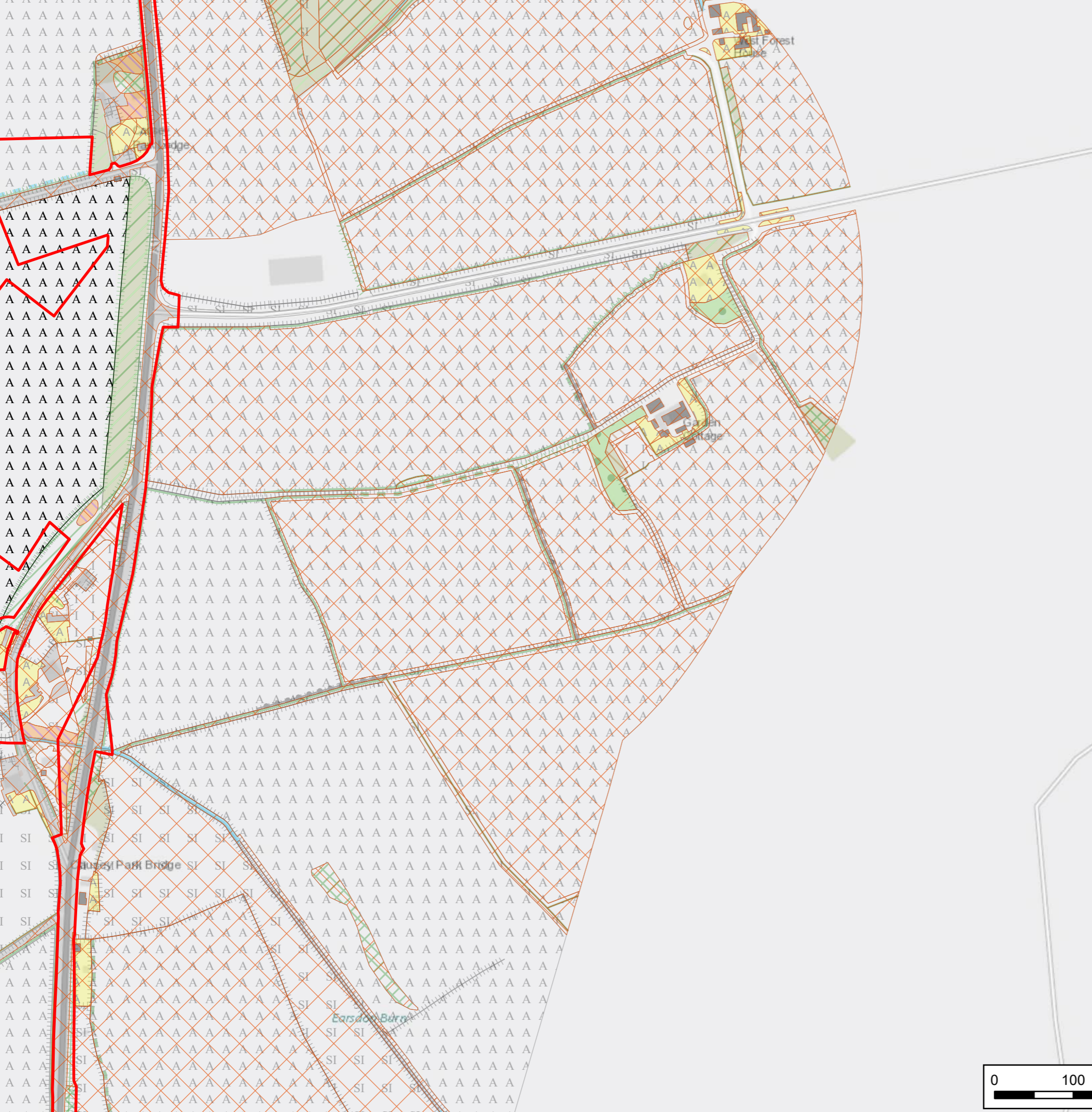
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Figure 3
Page 9 of 19





Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Spoil
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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A1 in Northumberland: Morpeth to Ellingham

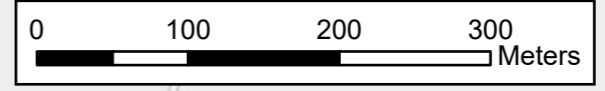
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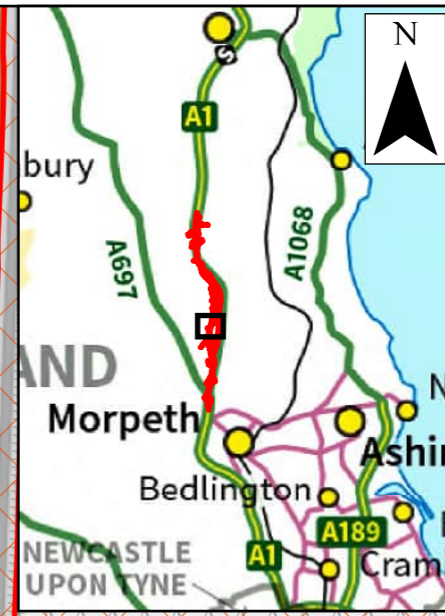
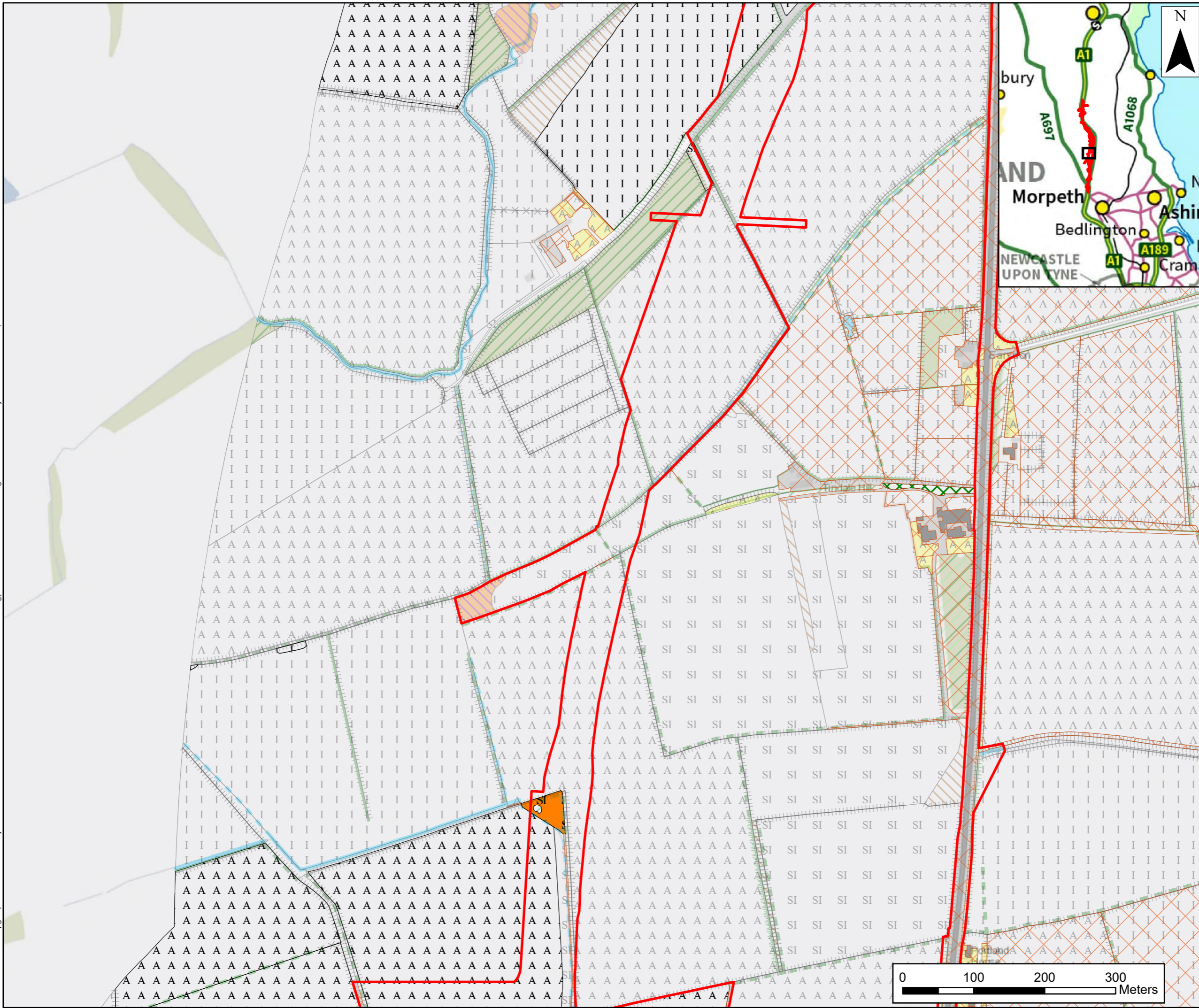
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Figure 3
Page 10 of 19





- Key**
- Site boundary
 - No access
 - Phase 1 Habitats**
 - Broadleaved woodland - plantation
 - Coniferous woodland - plantation
 - Mixed woodland - plantation
 - Scrub - dense/continuous
 - Neutral grassland - semi-improved
 - Improved grassland
 - Marsh/marshy grassland
 - Poor semi-improved grassland
 - Other tall herb and fern - ruderal
 - Standing water
 - Hard standing
 - Cultivated/disturbed land - arable
 - Cultivated/disturbed land - amenity grassland
 - Buildings
 - Boundary removed
 - Defunct hedge - species-poor
 - Dry ditch
 - Earth bank
 - Fence
 - Hedge with trees - species-poor
 - Intact hedge - native species-rich
 - Intact hedge - species-poor
 - Running water
 - Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

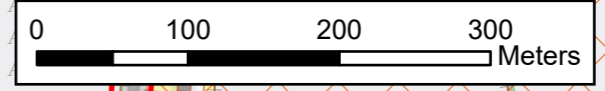
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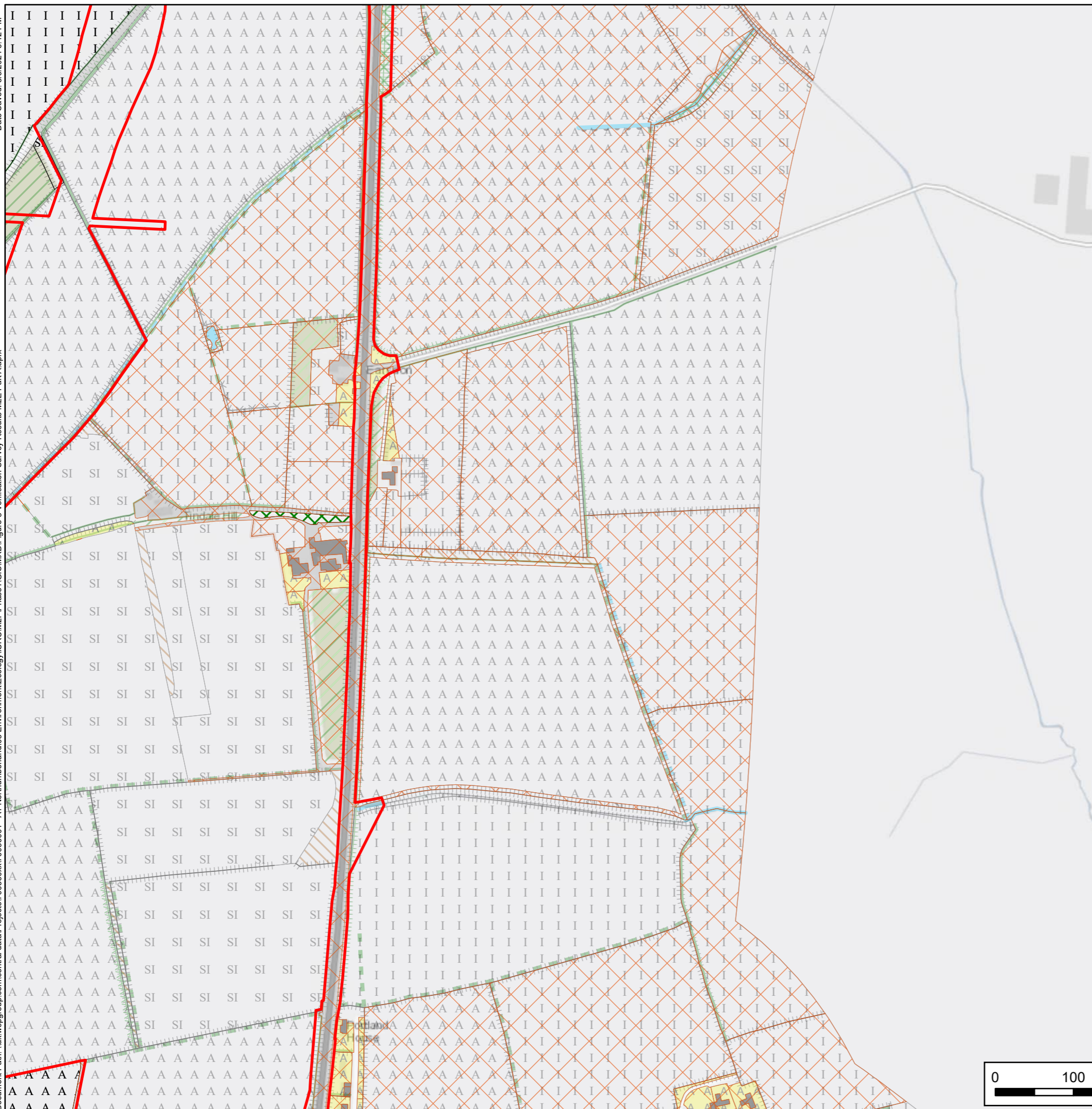
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DRAWING NUMBER: Figure 3 Page 11 of 19





- Key**
- Site boundary
 - No access
 - Phase 1 Habitats**
 - Broadleaved woodland - plantation
 - Coniferous woodland - plantation
 - Mixed woodland - plantation
 - Scrub - dense/continuous
 - Improved grassland
 - Poor semi-improved grassland
 - Other tall herb and fern - ruderal
 - Standing water
 - Hard standing
 - Cultivated/disturbed land - arable
 - Cultivated/disturbed land - amenity grassland
 - Buildings
 - Bare ground
 - Boundary removed
 - Defunct hedge - species-poor
 - Dry ditch
 - Earth bank
 - Fence
 - Hedge with trees - species-poor
 - Intact hedge - native species-rich
 - Intact hedge - species-poor
 - Running water
 - Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

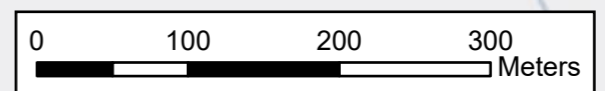
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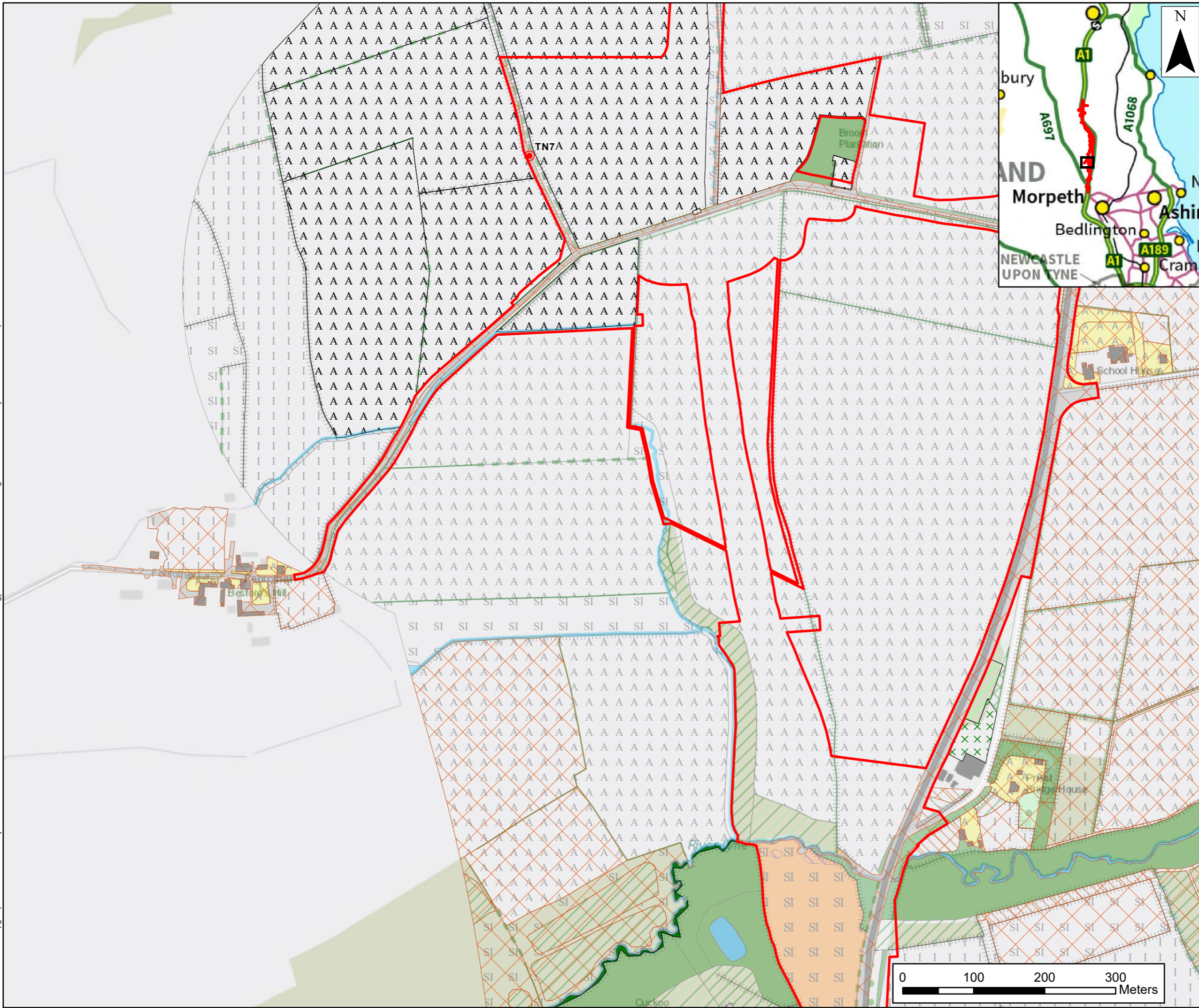
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Key

- Site boundary
- No access
- Target note

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Boundary removed
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water

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Client Name:

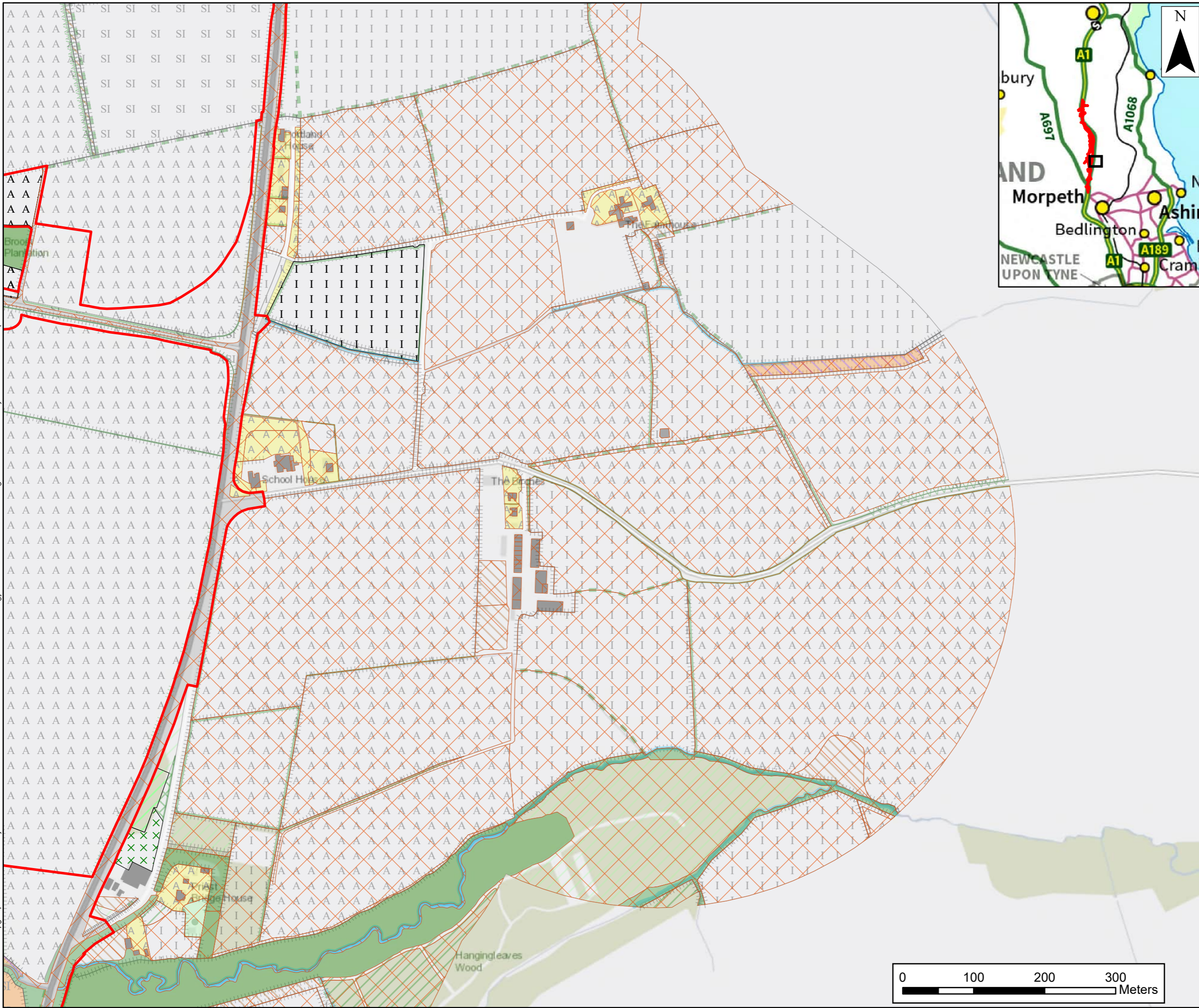
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A1 in Northumberland: Morpeth to Ellingham

DRAWING TITLE:
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Figure 3
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Key

- Site boundary
- No access

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Neutral grassland - semi-improved
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - species-poor
- Dry ditch
- Earth bank
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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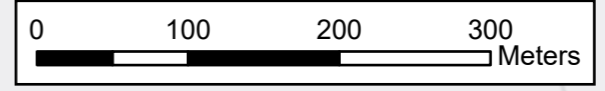
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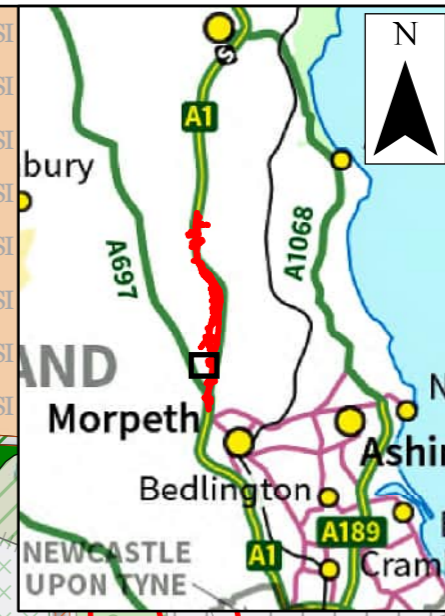
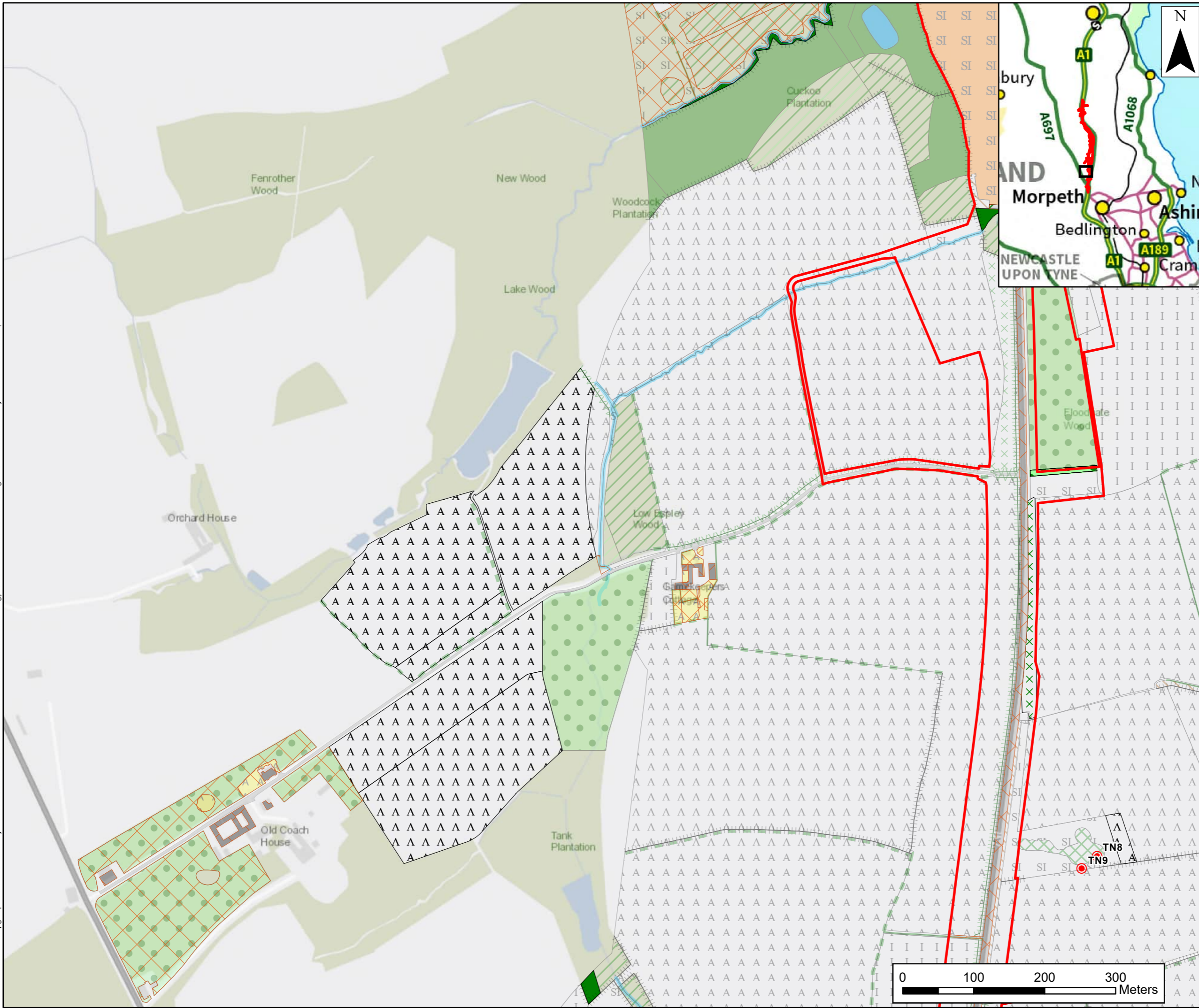
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DRAWING NUMBER:
Figure 3
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Key

- Site boundary
- No access
- Target note

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Broadleaved Parkland/scattered trees
- Neutral grassland - semi-improved
- Improved grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - species-poor
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

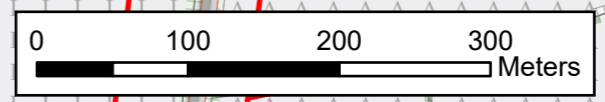
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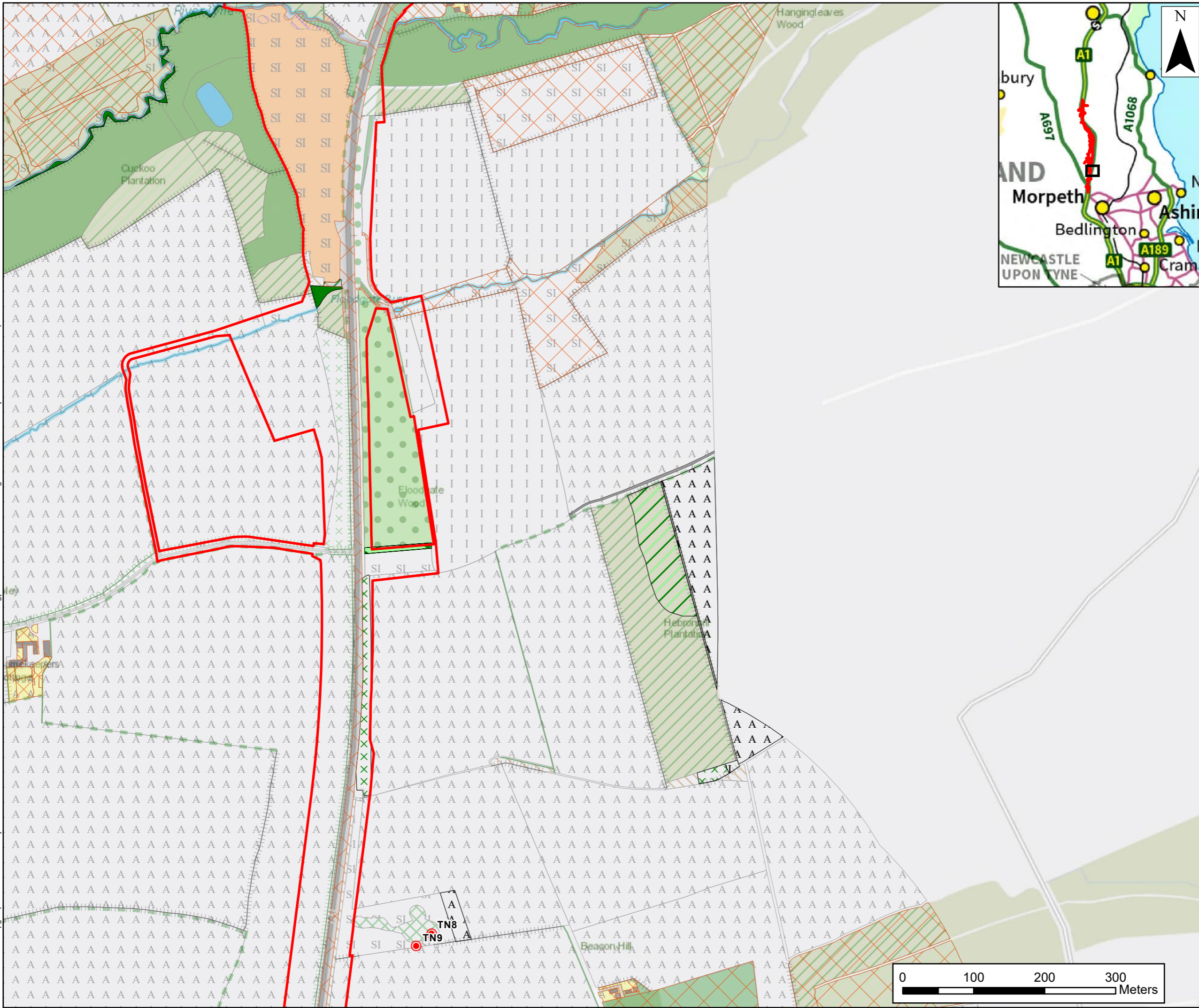
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DRAWING NUMBER: Figure 3 Page 15 of 19





- Key**
- Site boundary
 - No access
 - Target note
- Phase1 Habitats**
- Broadleaved woodland - semi-natural
 - Broadleaved woodland - plantation
 - Coniferous woodland - plantation
 - Mixed woodland - semi-natural
 - Mixed woodland - plantation
 - Scrub - dense/continuous
 - Scrub - scattered
 - Broadleaved Parkland/scattered trees
 - Neutral grassland - semi-improved
 - Improved grassland
 - Marsh/marshy grassland
 - Poor semi-improved grassland
 - Other tall herb and fern - ruderal
 - Standing water
 - Hard standing
 - Cultivated/disturbed land - arable
 - Cultivated/disturbed land - amenity grassland
 - Buildings
 - Defunct hedge - species-poor
 - Dry ditch
 - Fence
 - Hedge with trees - species-poor
 - Intact hedge - native species-rich
 - Intact hedge - species-poor
 - Running water

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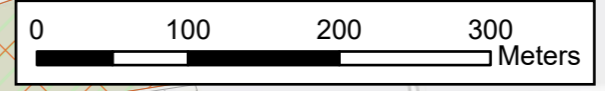
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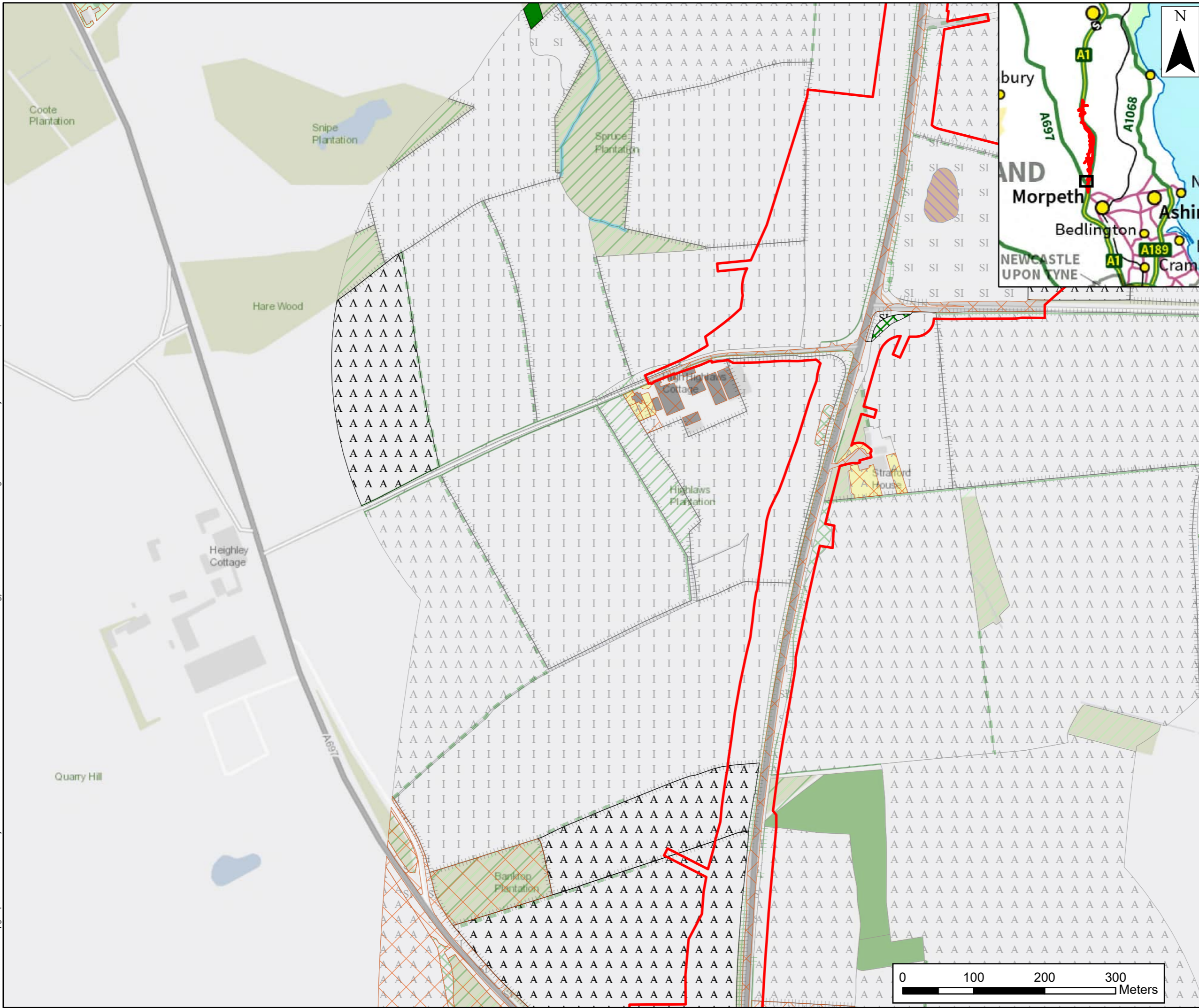
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DRAWING NUMBER: Figure 3 Page 16 of 19





Key

- Site boundary
- No access
- Target note

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - semi-natural
- Mixed woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - species-poor
- Fence
- Hedge with trees - species-poor
- Intact hedge - species-poor
- Running water

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

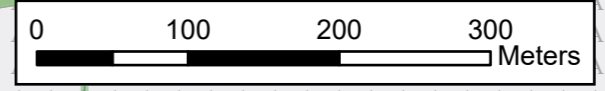
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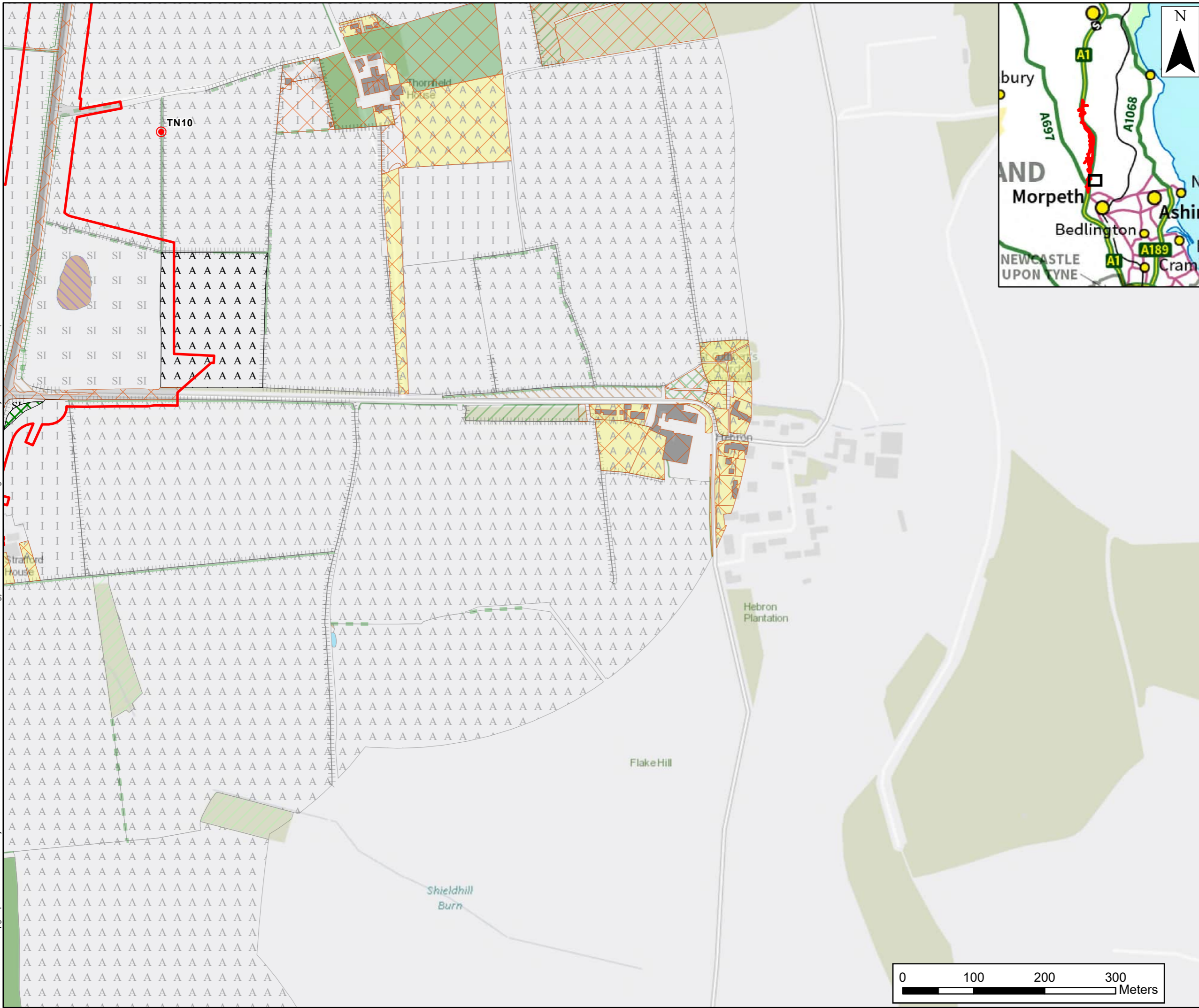
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Key

- Site boundary
- No access
- Target note

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - species-poor
- Fence
- Hedge with trees - species-poor
- Intact hedge - species-poor
- Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

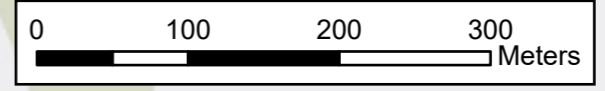
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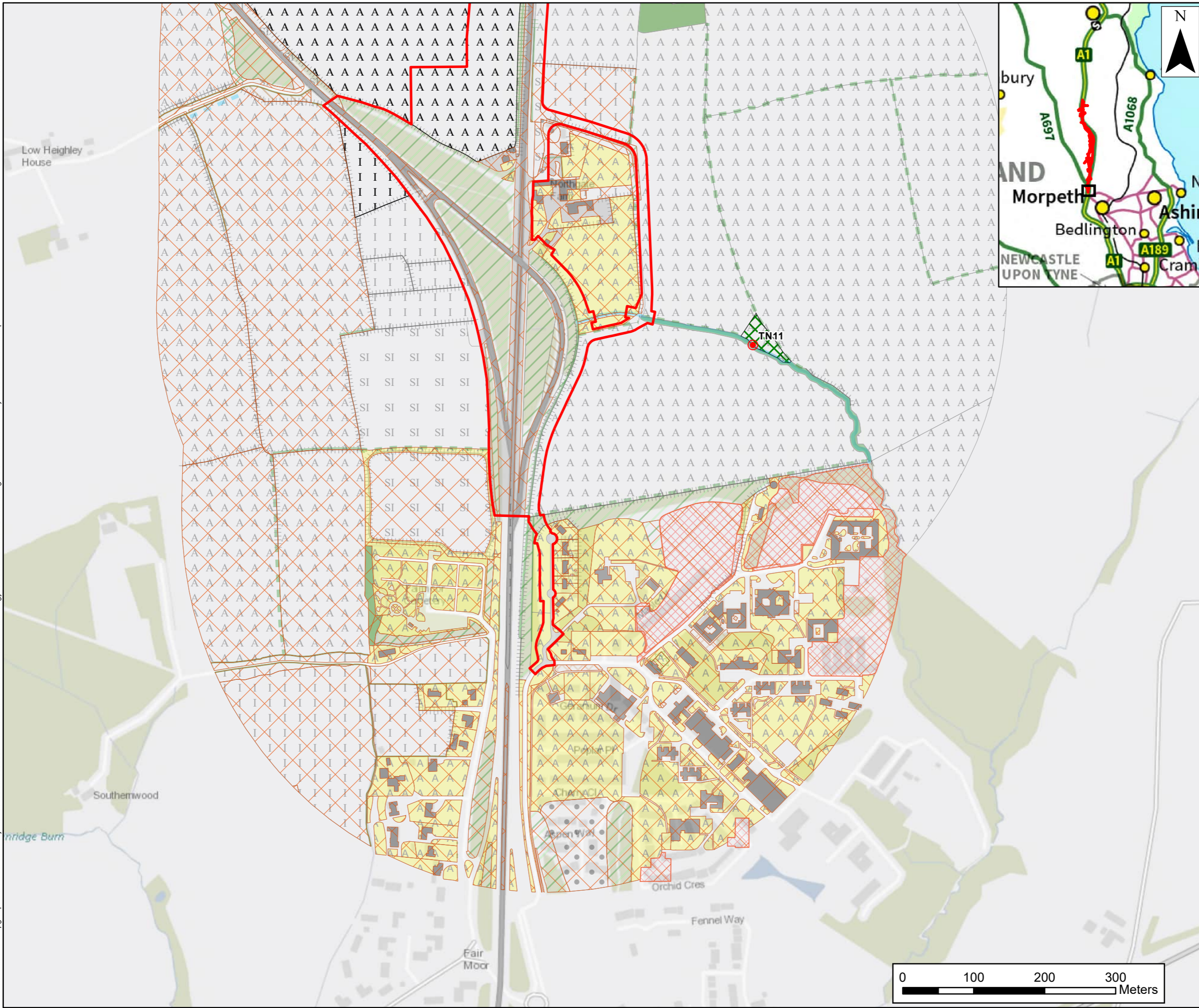
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Key

- Site boundary
- No access
- Target note

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Broadleaved Parkland/scattered trees
- Improved grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Introduced shrub
- Buildings
- Bare ground
- Not accessed land
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

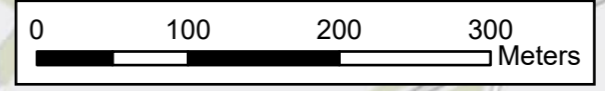
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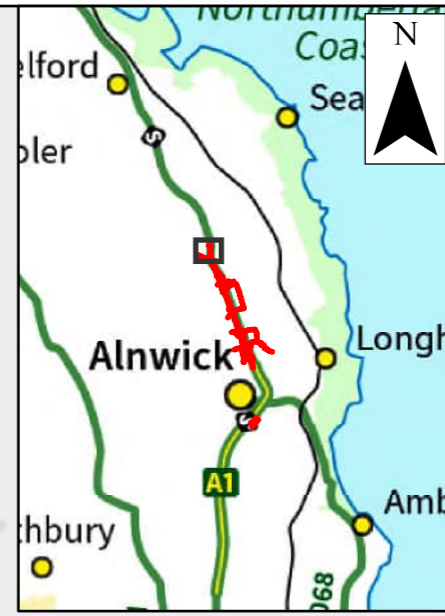
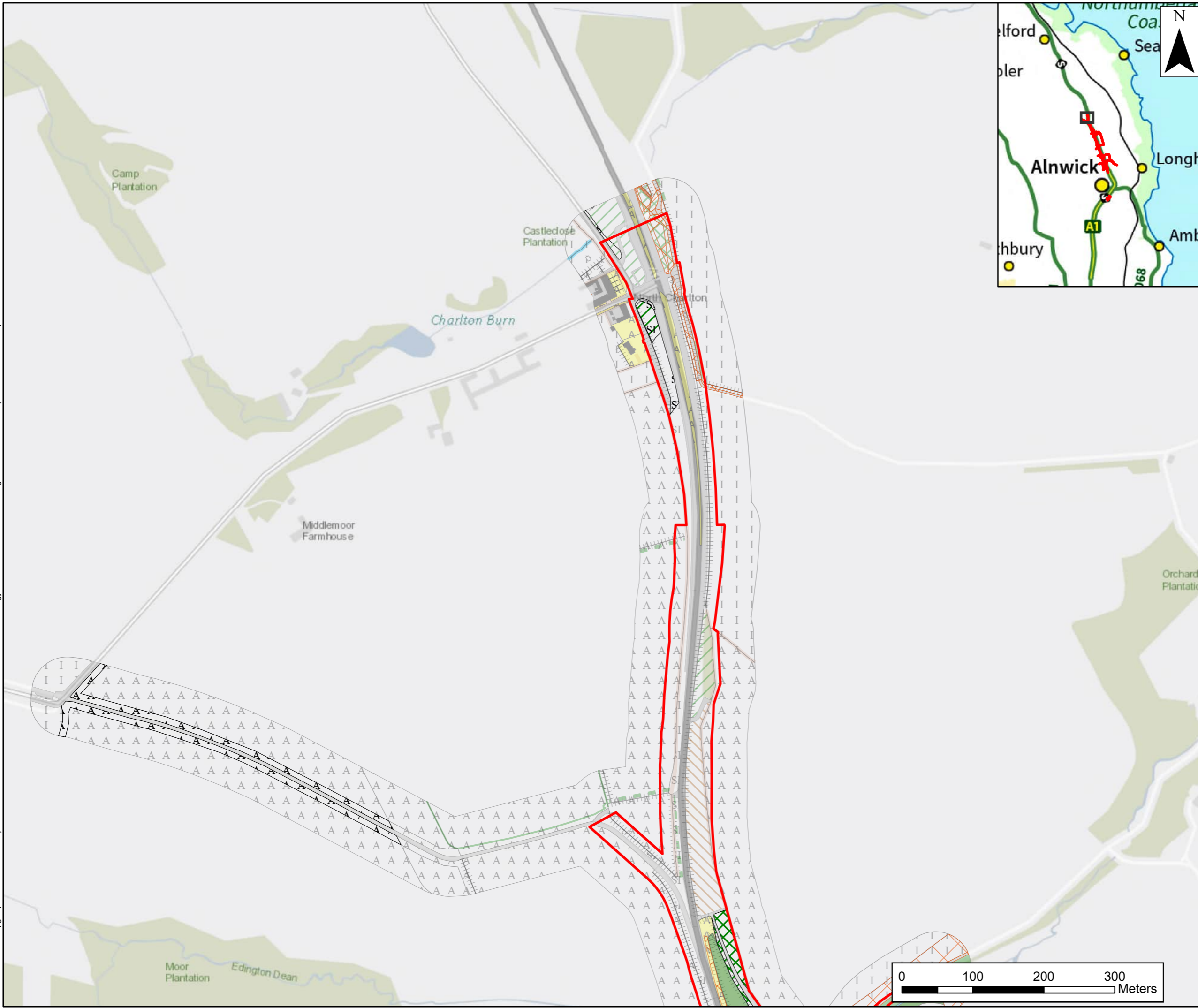
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Figure 3
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Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Scrub - dense/continuous
- Improved grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Running water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - species-poor
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

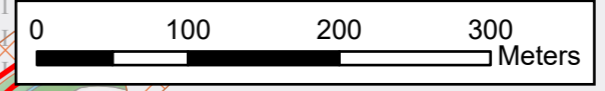
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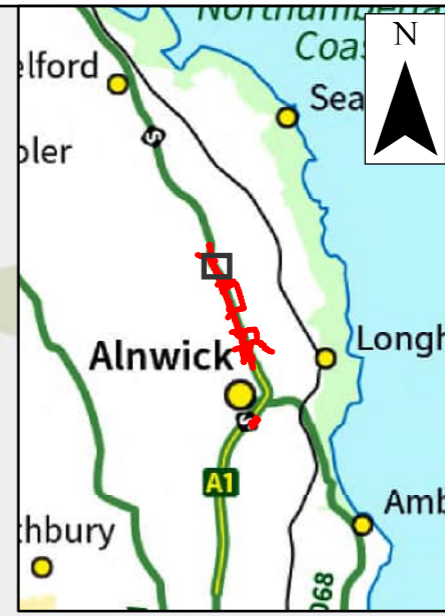
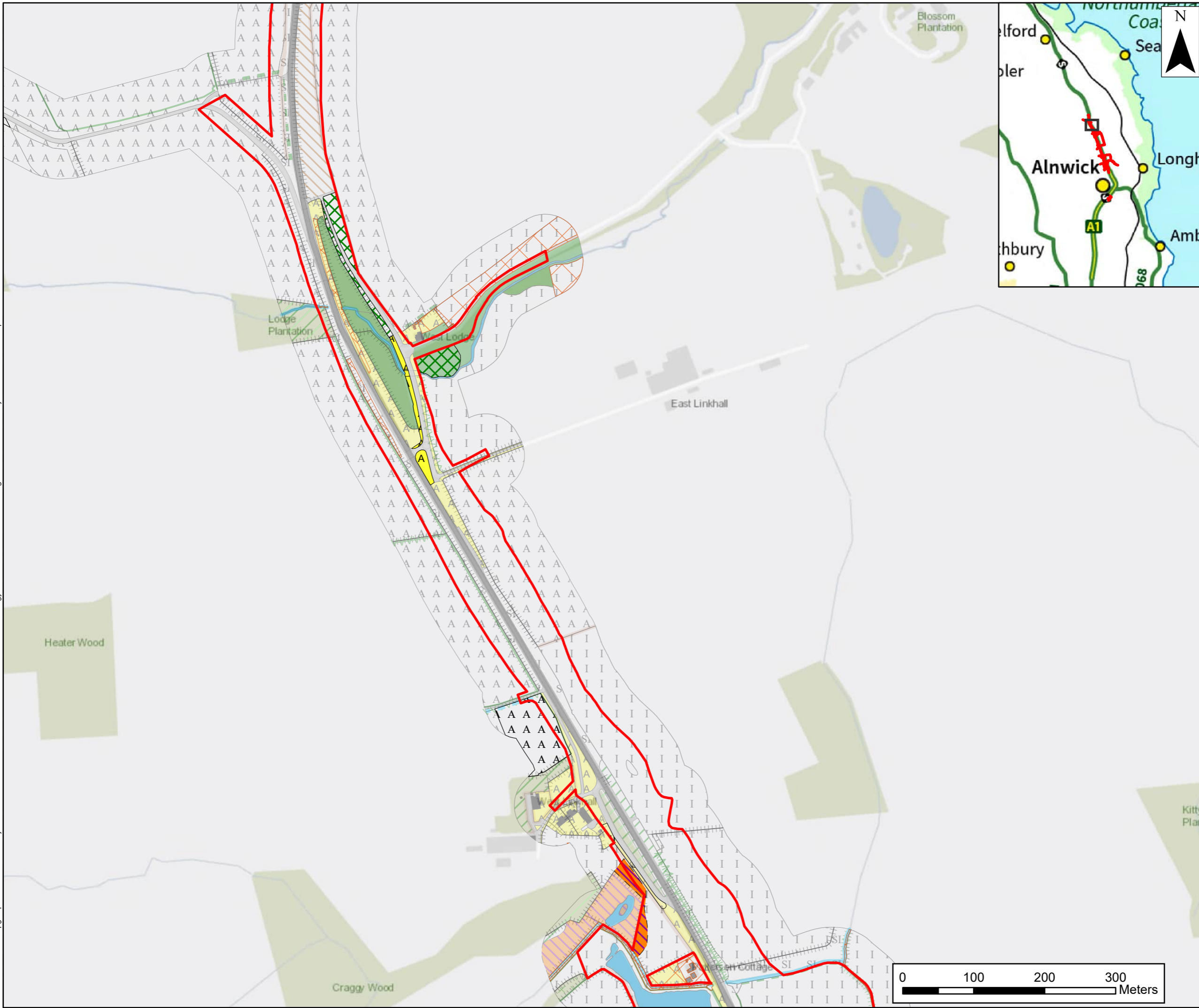
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DRAWING NUMBER: Figure 4
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Key

- Site boundary
- No access

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Running water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - native species-rich
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Hedge with trees - native species-rich
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

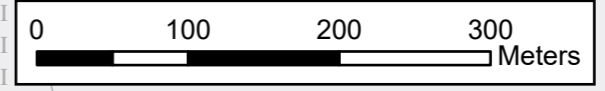
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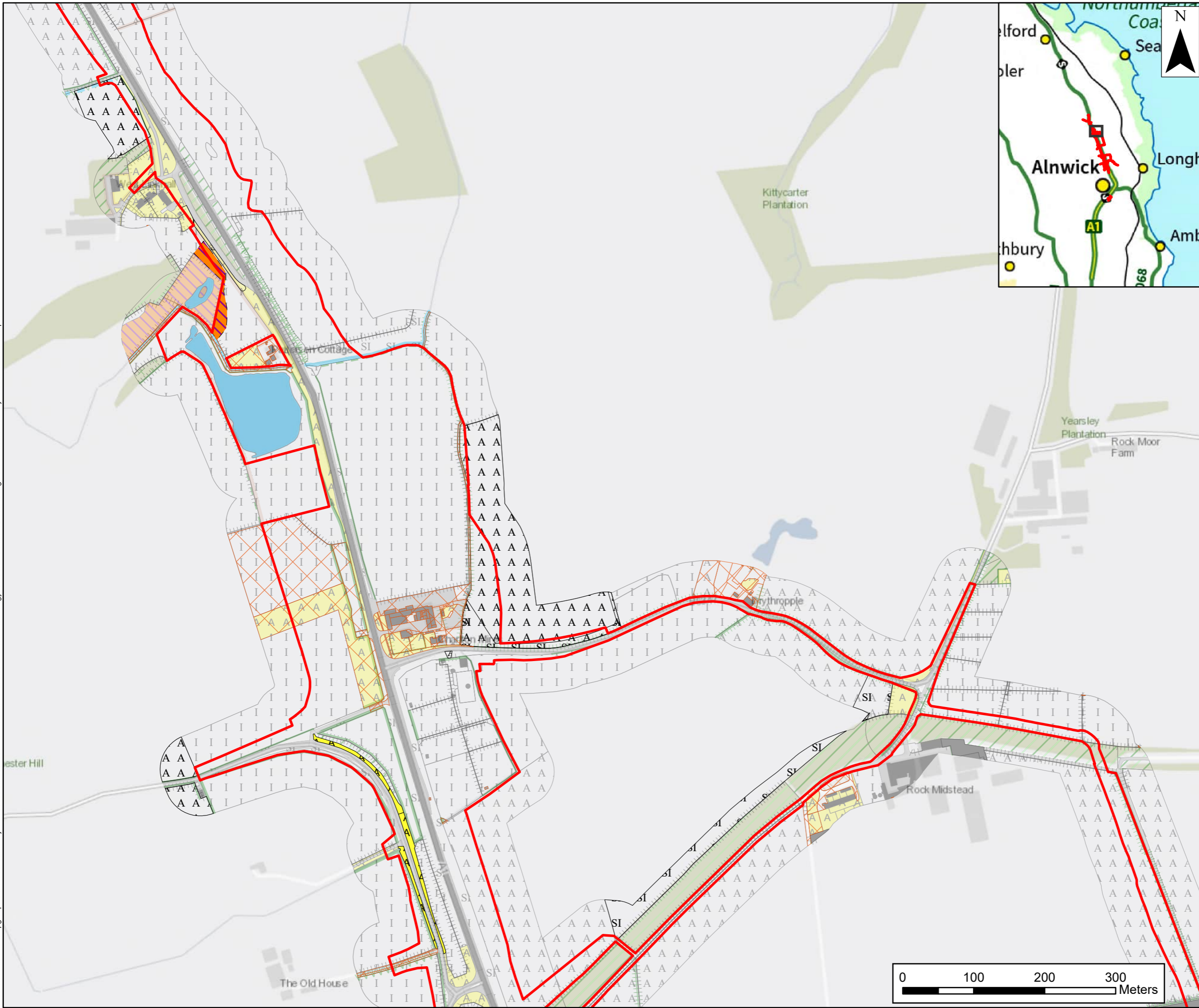
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DRAWING NUMBER: Figure 4
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Key

- Site boundary
- ⊠ No access
- Phase1 Habitats**
- ▨ Broadleaved woodland - plantation
- ▧ Coniferous woodland - plantation
- ▩ Mixed woodland - plantation
- ⊞ Scrub - scattered
- ▤ Improved grassland
- ▥ Marsh/marshy grassland
- ▦ Poor semi-improved grassland
- Standing water
- Running water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- ⊞ Introduced shrub
- Buildings
- Bare ground
- ∩ Defunct hedge - native species-rich
- ∩ Defunct hedge - species-poor
- ∩ Dry ditch
- ∩ Fence
- ∩ Hedge with trees - native species-rich
- ∩ Hedge with trees - species-poor
- ∩ Intact hedge - native species-rich
- ∩ Intact hedge - species-poor
- ∩ Running water
- ∩ Wall

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Client Name: **highways england**

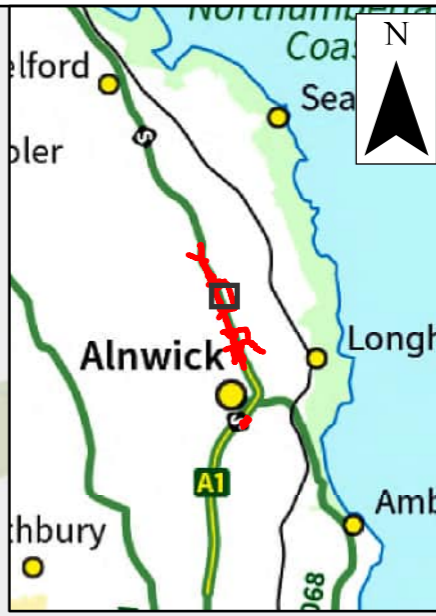
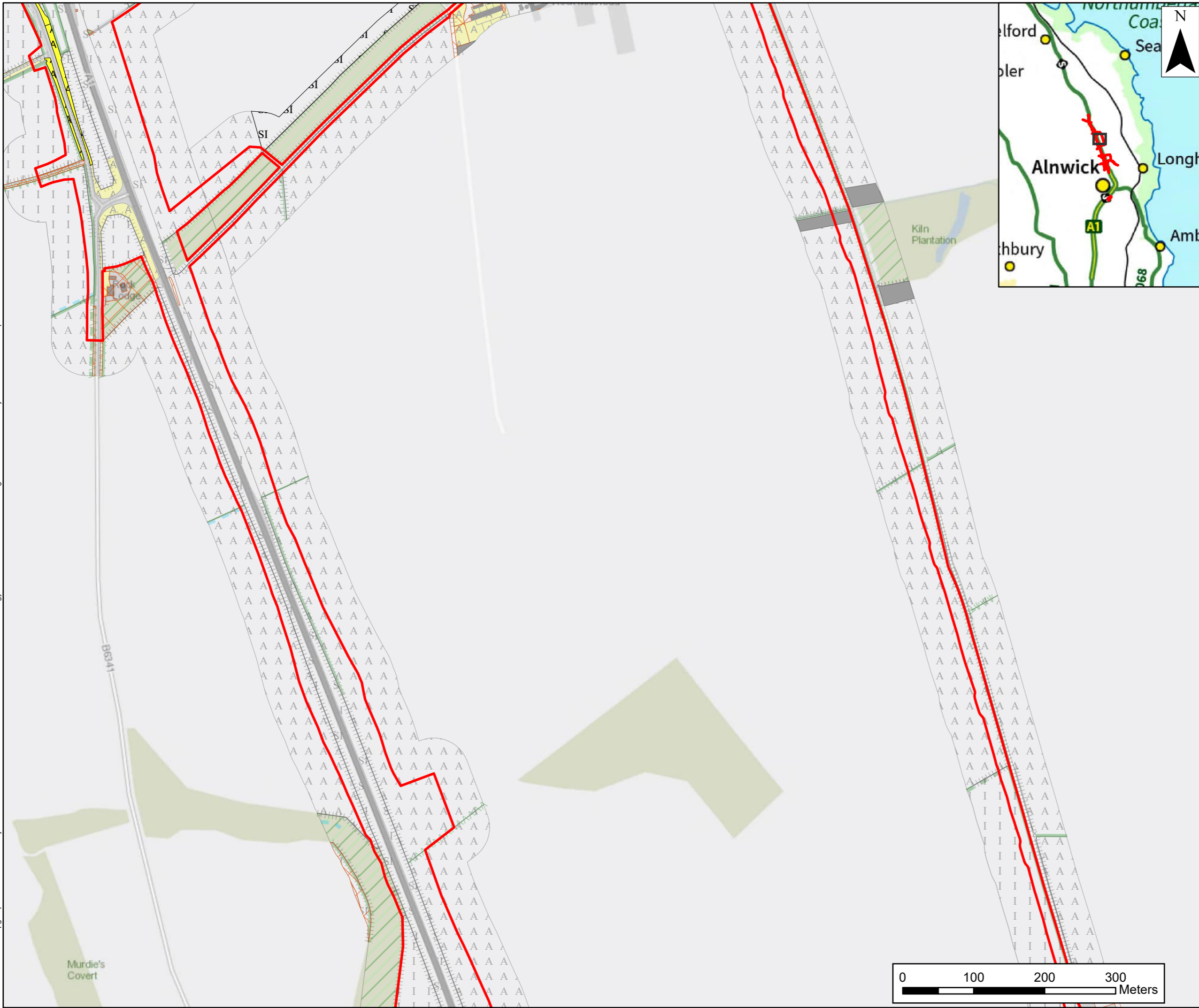
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DRAWING NUMBER: Figure 4
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Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Improved grassland
- Poor semi-improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Introduced shrub
- Buildings
- Other habitat
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Hedge with trees - native species-rich
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

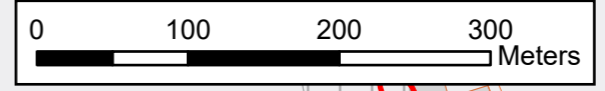
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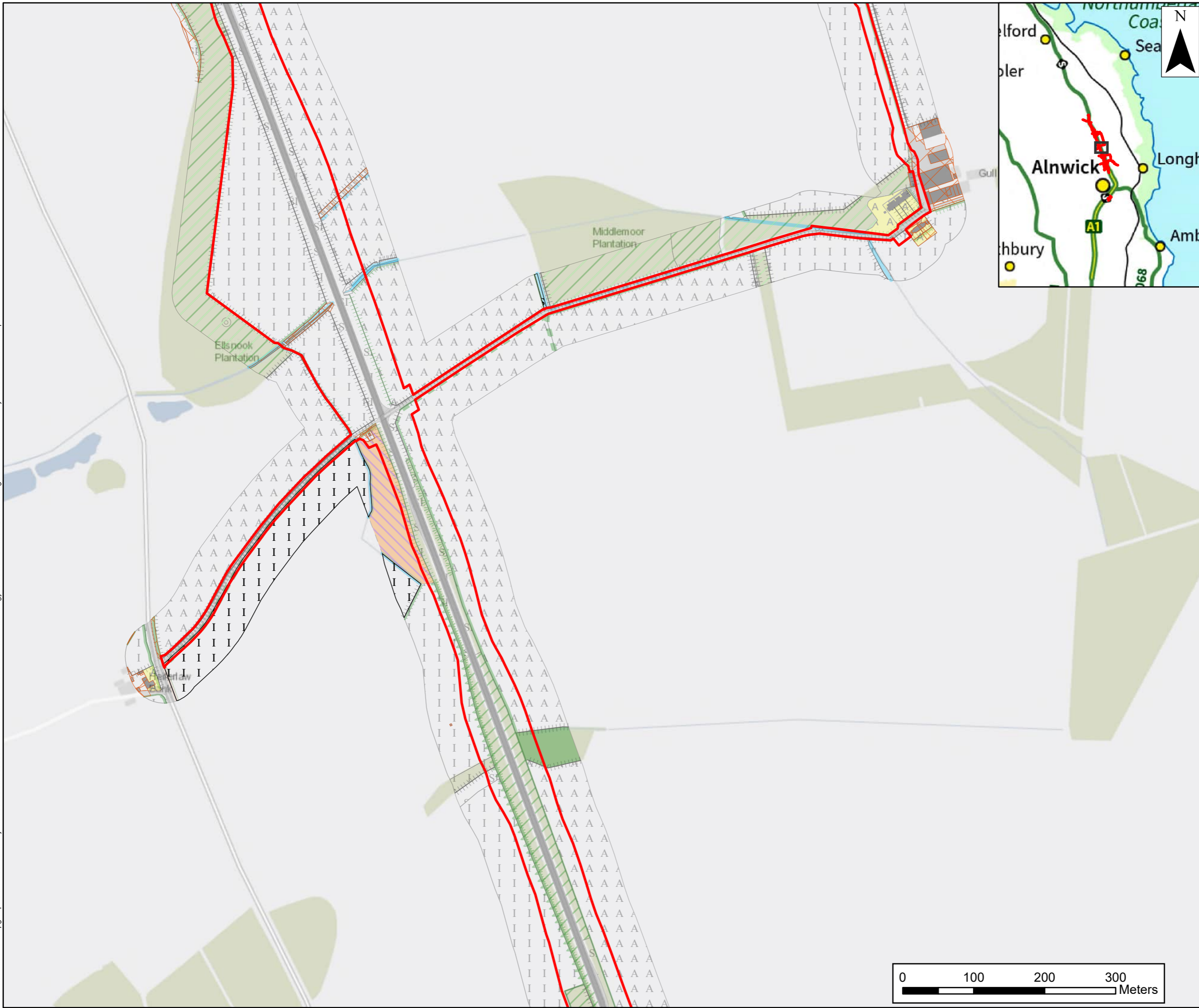
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DRAWING NUMBER: Figure 4
Page 4 of 11





Key

- Site boundary
- No access

Phase 1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Running water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - species-poor
- Dry ditch
- Fence
- Hedge with trees - native species-rich
- Hedge with trees - species-poor
- Intact hedge - native species-rich
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

DRAWING TITLE: Figure 4: Verification Survey Results M2E Part B

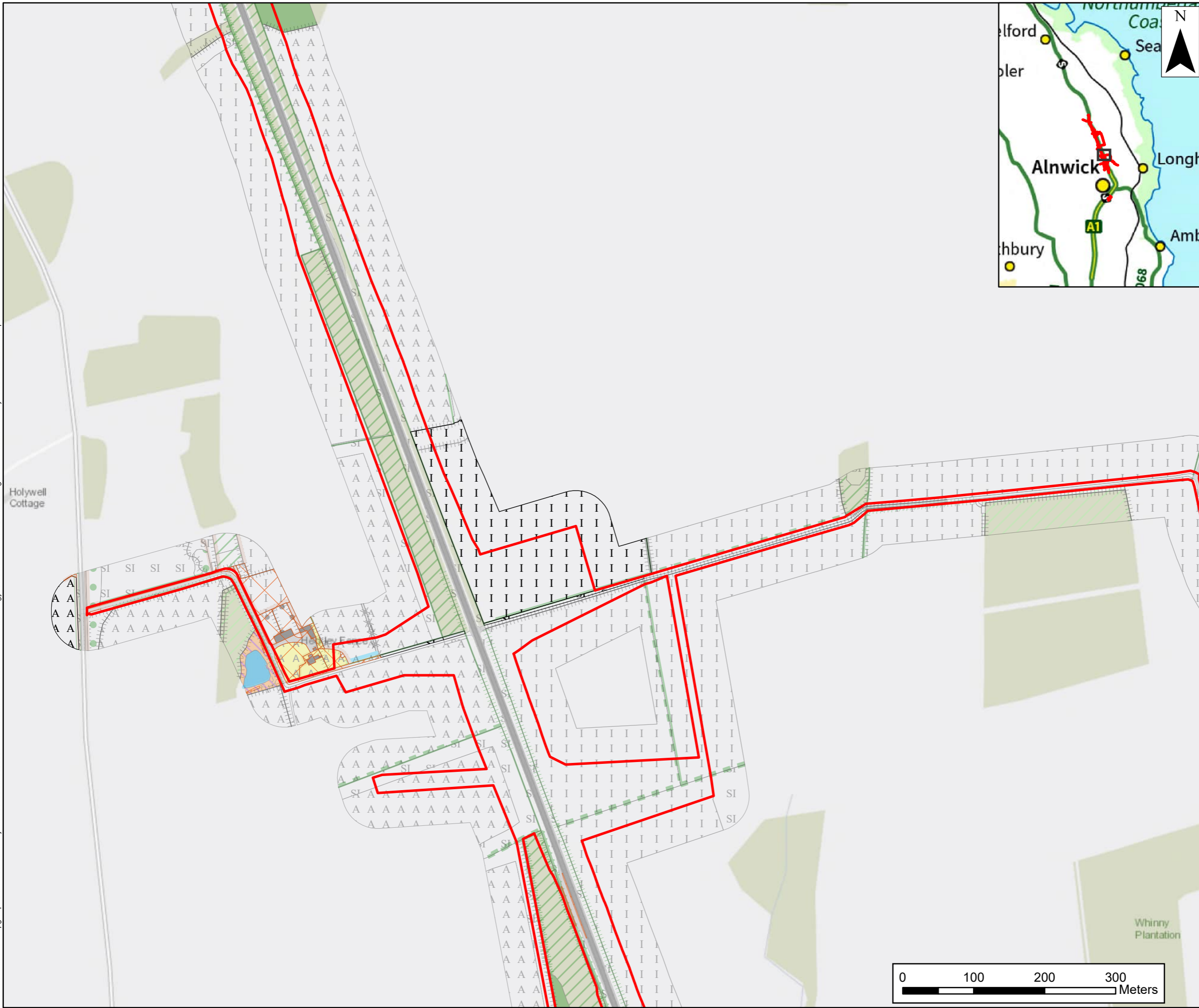
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DRAWING NUMBER: Figure 4
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Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Broadleaved Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Standing water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Other habitat
- Boundary removed
- Defunct hedge - species-poor
- Fence
- Hedge with trees - native species-rich
- Hedge with trees - species-poor
- Intact hedge - species-poor
- Running water
- Wall

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

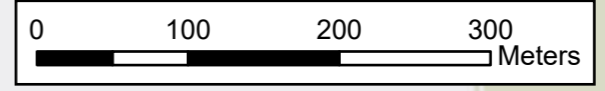
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DRAWING NUMBER: Figure 4
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Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Scrub - scattered
- Mixed Parkland/scattered trees
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Hard standing
- Inland cliff - acid/neutral
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Boundary removed
- Defunct hedge - species-poor
- Earth bank
- Fence
- Hedge with trees - native species-rich
- Hedge with trees - species-poor
- Intact hedge - species-poor
- Running water
- Wall

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WSP

Client Name:

PROJECT TITLE:
A1 in Northumberland: Morpeth to Ellingham

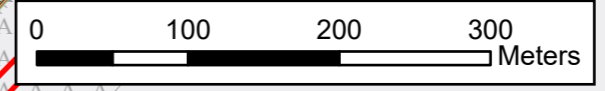
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Figure 4: Verification Survey Results M2E Part B

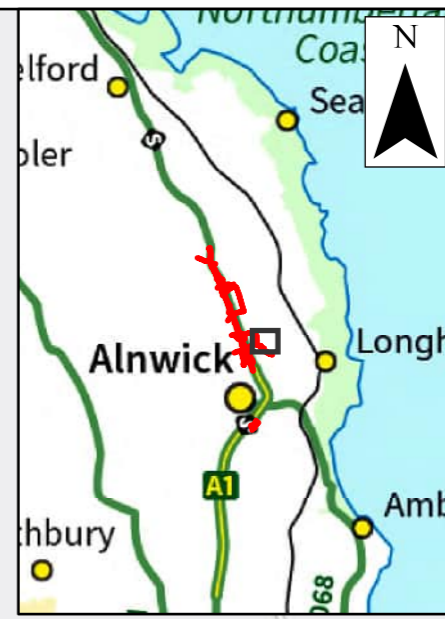
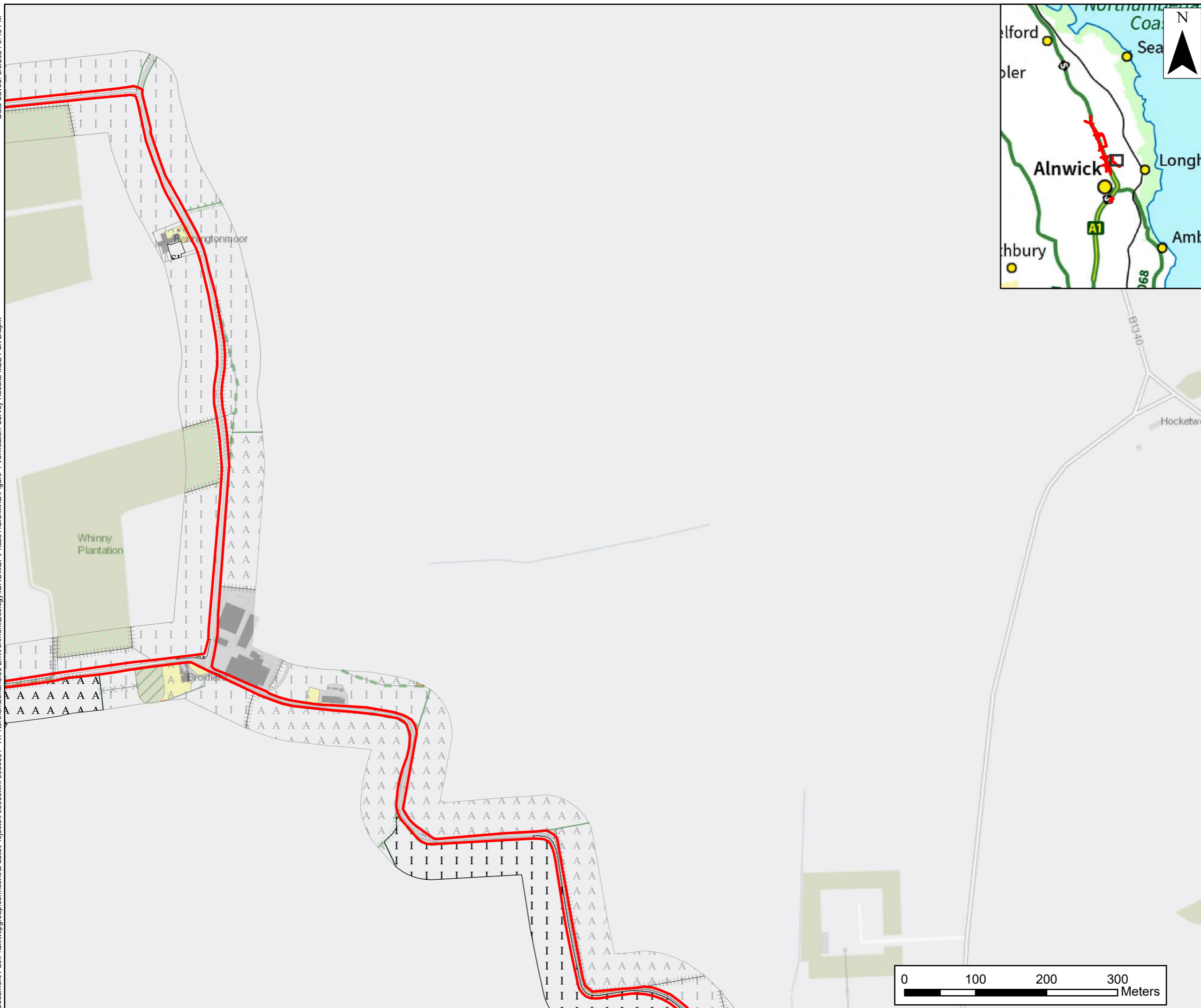
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Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Improved grassland
- Poor semi-improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Other habitat
- x Boundary removed
- Defunct hedge - species-poor
- + Fence
- v Hedge with trees - native species-rich
- + Hedge with trees - species-poor
- Intact hedge - species-poor
- Wall

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Client Name:

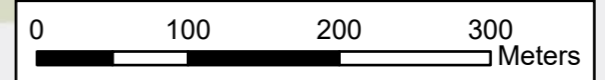
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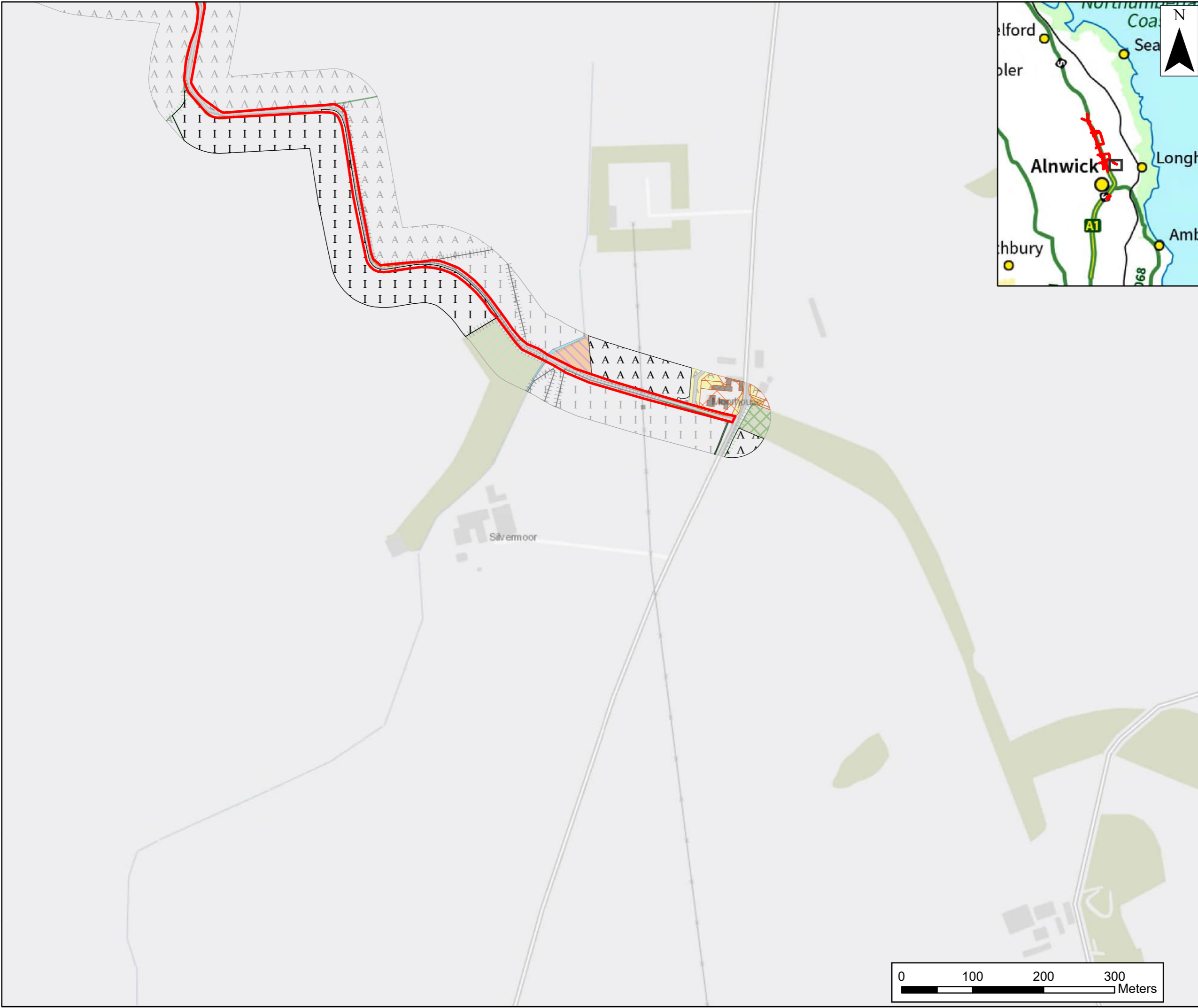
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Key

- Site boundary
- No access

Phase 1 Habitats

- Coniferous woodland - plantation
- Scrub - dense/continuous
- Improved grassland
- Marsh/marshy grassland
- Poor semi-improved grassland
- Running water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Buildings
- Defunct hedge - species-poor
- Fence
- Hedge with trees - species-poor
- Intact hedge - species-poor

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Client Name:

PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

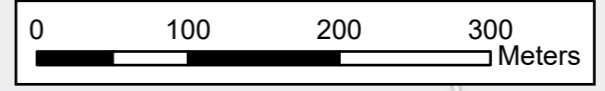
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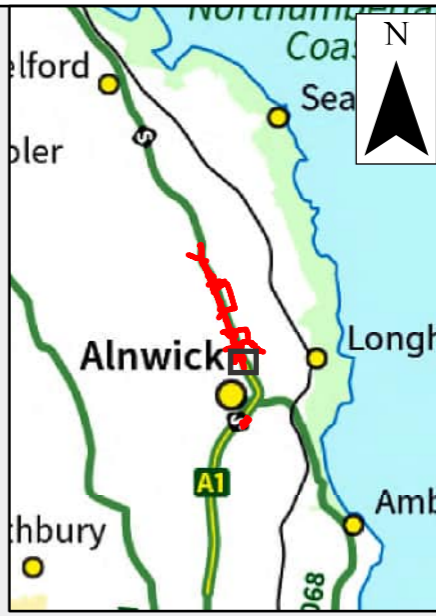
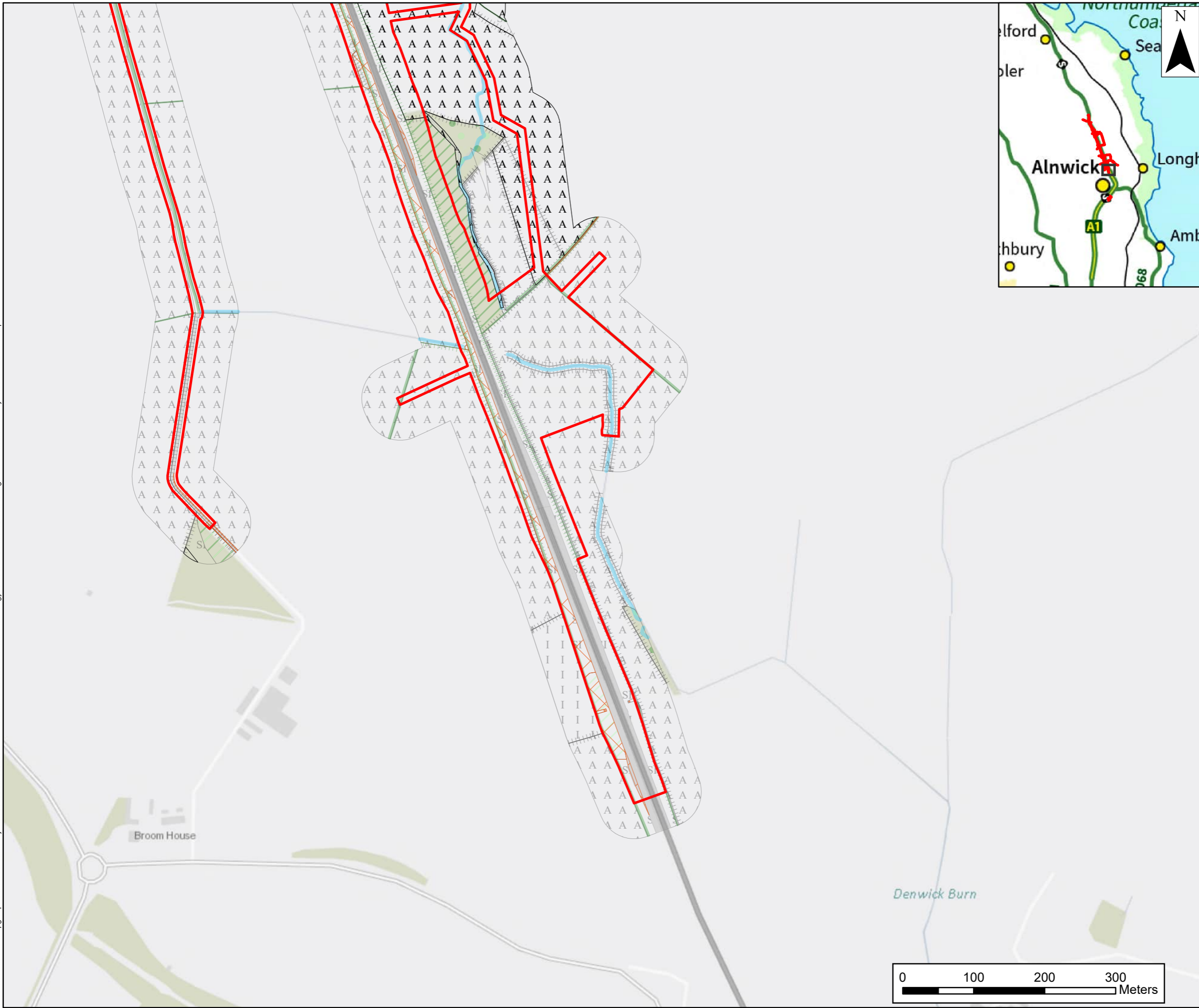
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Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Mixed Parkland/scattered trees
- Improved grassland
- Poor semi-improved grassland
- Hard standing
- Cultivated/disturbed land - arable
- Fence
- Hedge with trees - species-poor
- Intact hedge - species-poor
- Running water

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PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

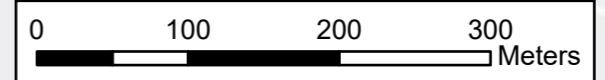
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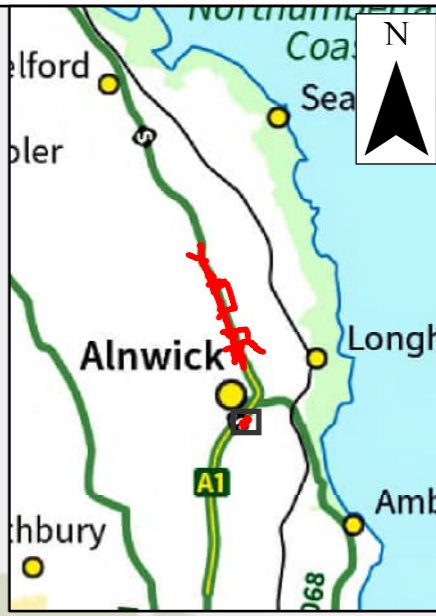
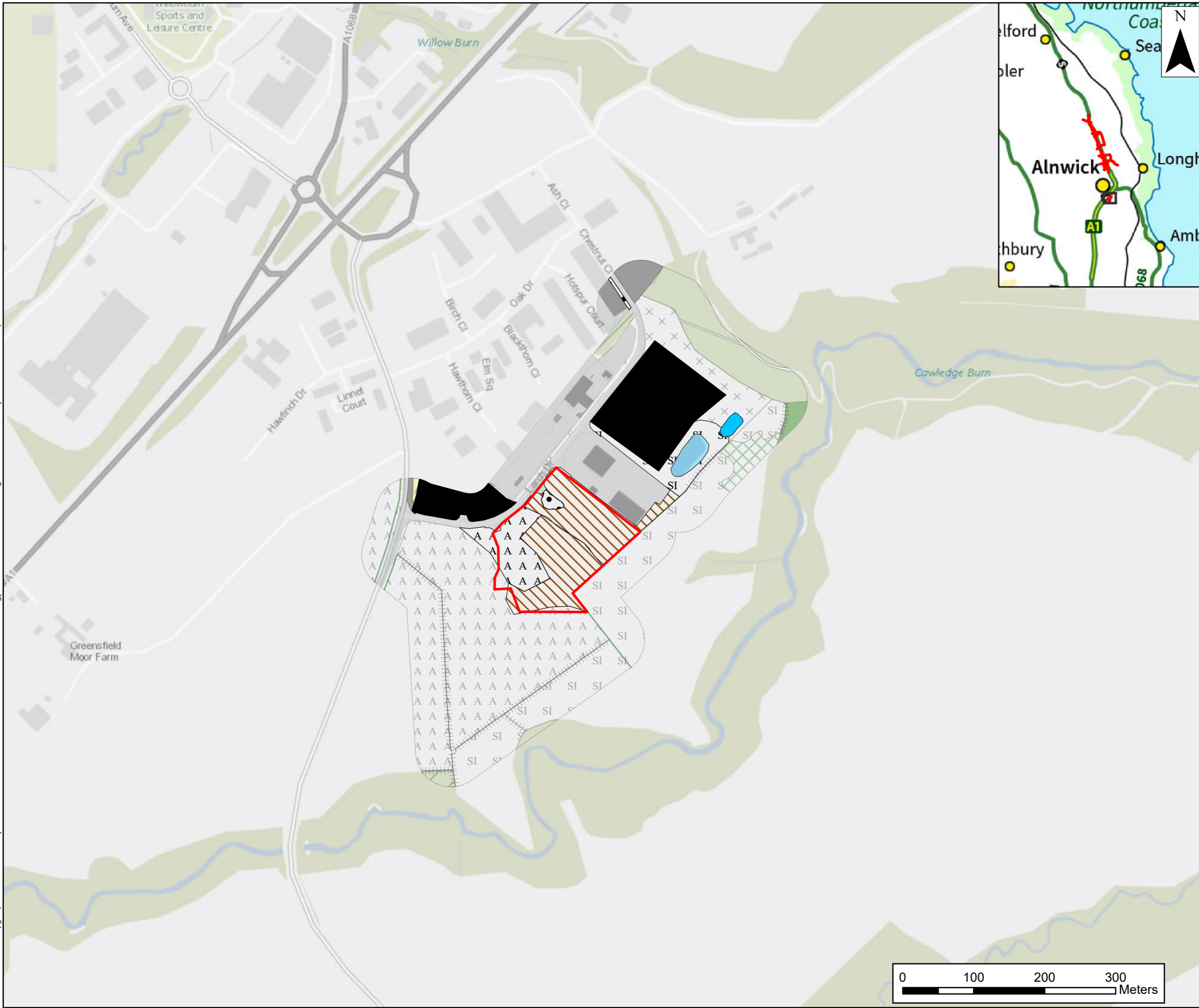
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Key

- Site boundary
- No access

Phase1 Habitats

- Broadleaved woodland - semi-natural
- Broadleaved woodland - plantation
- Coniferous woodland - plantation
- Mixed woodland - plantation
- Scrub - dense/continuous
- Poor semi-improved grassland
- Other tall herb and fern - ruderal
- Standing water
- Running water
- Hard standing
- Cultivated/disturbed land - arable
- Cultivated/disturbed land - amenity grassland
- Cultivated/disturbed land - ephemeral/short perennial
- Buildings
- Bare ground
- Fence
- Intact hedge - species-poor

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PROJECT TITLE: A1 in Northumberland: Morpeth to Ellingham

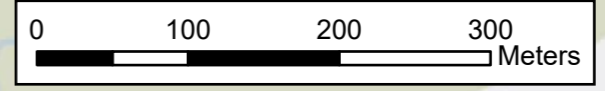
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