RWE

Peartree Hill Solar Farm

Environmental Statement

Volume 4

Appendix 7.7: Water Vole and Otter Habitat Suitability Report

Revision 23 (tracked)



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1.0 INTRODUCTION

1.1 Purpose of this report

- 1.1.1 This report presents the results of the water vole (*Arvicola amphibius*) and otter (*Lutra lutra*) habitat assessments for the proposed Peartree Hill Solar Farm (the 'Proposed Development') on land east of Beverley, East Riding of Yorkshire (the 'Site'). The survey area included land within the 'Order Limits (i.e. the maximum extent within which the Proposed Development can be carried out), plus adjacent land up to 30m from the Order Limits where access permitted. In particular, the assessment relates to locations where watercourses/ ditches are potentially impacted. RSK was commissioned by RWE Renewables UK Solar and Storage Ltd to carry out the surveys. This information has been used to inform the Environmental Statement (ES) Volume 2, Chapter 7: Biodiversity [EN010157/APP/6.2].
- 1.1.2 The report presents the methods and results of the surveys which were designed to obtain information regarding otter and water vole habitat at the proposed crossing points of watercourses.

1.2 **Development proposals**

- 1.2.1 The Proposed Development comprises the construction, operation (including maintenance) and decommissioning of a solar photovoltaic (PV) electricity generating and storage facility with an export capacity of up to 320 megawatts (MW) and associated infrastructure, as described within ES Volume 1, Chapter 3: Proposed Development Description [EN010157/APP/6.1] and Schedule 1 of the Draft Development Consent Order (DCO) [EN010157/APP/3.1].
- 1.2.2 The Proposed Development comprises several areas of land (Land Areas B-F) connected by a series of underground cables. The Proposed Development will connect to the National Grid Creyke Beck Substation via underground cables (the 'grid connection cable route') and there are 'interconnecting cable routes' that run between the Land Areas. The Land Areas and underground cable routes are shown on ES Volume 3, Figure 1.2: Land Areas and Cable Routes Plan with Field Numbering System [EN010157/APP/6.3].
- 1.2.3 Existing areas of woodland within the Order Limits are to be retained, and some parts of the Proposed Development will be used for ecological mitigation/enhancement.
- 1.2.4 It is anticipated that the majority of existing habitats around the boundary of the Land Areas (hedgerows and ditches) will be retained post-development. However, sections of hedgerow, ditches, field margins and trees will be affected during construction, particularly for facilitating access and cable



- routes. Where possible, methods to reduce impact to these habitats, such as horizontal directional drilling (HDD), will be employed.
- 1.2.5 Extensive areas within the Order Limits are due to be managed for biodiversity to mitigate the loss of ground-nesting and wintering-bird habitat, as well as to ensure the Proposed Development achieves its Biodiversity Net Gain target. Although many of the proposed ecological mitigation areas will be created for ground-nesting and wintering birds, these will also benefit a wide range of species, including bats. As well as ecological mitigation areas, existing habitats will be enhanced through measures such as hedgerow planting and ecologically sensitive habitat management. These measures are outlined in the Outline Landscape and Ecological Management Plan (Outline LEMP) [EN010157/APP/7.5].
- 1.2.6 The ditches and watercourses will only be impacted when a ditch is crossed by a cable or access track. This is anticipated to involve trenching to install a buried cable (as a worst case assumption; alternative, less impacting methods may be used where appropriate), or culverting the ditch to act as a bridge to create an access track. Preliminary designs at the time these surveys were undertaken indicated 42 of these crossing points would be required though this is still subject to detailed design.

1.3 Site context

- 1.3.1 The Site encompasses an area of approximately 893 hectares (ha) and is located to the east of the town of Beverley, close to the hamlet of Meaux and villages of Routh and Long Riston.
- 1.3.2 Each Land Area is made up of number-referenced fields (e.g. Field B1). Most of these are arable fields. However, there are also some fields of grazed grassland, and relatively small areas of neutral grassland, broadleaved woodland and scrub in some of the parcels. The fields are bordered by hedgerows, farm access tracks, ditches and watercourses, and there are also some small woodland blocks.
- 1.3.3 The surrounding land is largely agricultural land, farmsteads and minor settlements with a complex network of watercourses and ditches. Land Areas B to F have few roads other than Meaux Lane, which cuts through the centre of Land Areas D and F. The easternmost Fields B5 and B6 are separated from the rest of the Land Areas by the A165 road. The River Hull flows close to the western edges of Land Area E and intersects the grid connection cable route.
- 1.3.4 The interconnecting cable routes comprise mostly arable fields bordered by hedgerows, tree lines and wet drains/ditches.
- 1.3.5 The grid connection cable route links the Proposed Development to National Grid Creyke Beck Substation, located close to Cottingham. The habitat within the cable route is mostly arable fields; however, there are sections of modified grassland and notable habitats within Figham Pastures Local Wildlife Site.



2.0 METHODS

2.1 Water Vole Habitat Assessment

- 2.1.1 The survey targeted 42 locations, which are sections of watercourses/ ditches where a potential impact was identified during the design process at the time the survey was undertaken. Additional areas have been assessed during other surveys such as the Preliminary Ecological Appraisal (PEA) walkover survey (ES Volume 4, Appendix 7.1: Preliminary Ecological Appraisal Report [EN010157/APP/6.4]). The 42 survey locations were assessed by a suitably qualified expert between 20 and 22 August 2024.
- 2.1.2 Additional information has been reported by suitably qualified experts during the PEA survey between 13 and 19 August 2024 (**ES Volume 4, Appendix 7.1: Preliminary Ecological Appraisal Report [EN010157/APP/6.4]**).
- 2.1.3 The water vole habitats assessment was undertaken based on methods discussed in Dean (2021). Habitats were assessed as providing optimal, good, suitable but poor, or negligible suitability to support water voles based on five criteria:
 - Bank profile
 - Bank substrate
 - Water level variation
 - Herbaceous vegetation
 - Water presence.

2.2 Otter Habitat Assessment

- 2.2.1 The survey has been undertaken to assess the habitat suitability of the Site for otters, based on information provided in Chanin (2003). Otter make use of aquatic habitat corridors to traverse their large territorial range, in order to find food, places of shelter, and mates. This assessment has focused on identifying the main habitat corridors for otter, by assessing the suitability of the ditches and rivers to provide an overview of how otter may be using the Site.
- 2.2.2 Habitat that is considered "good" is likely to be used fairly regularly by otter to travel through their territory. Habitat that is considered "suitable but poor" is available for otter to make use of, but will provide less habitat suitability (e.g. less cover or less opportunity for foraging).
- 2.2.3 The assessment was undertaken by a suitably qualified expert between 20 and 22 August 2024. Additional information has been reported by suitably qualified experts during the PEA survey between 13 and 19 August 2024 (ES Volume 4, Appendix 7.1: Preliminary Ecological Appraisal Report [EN010157/APP/6.4]).



2.2.4 The assessment was for the suitability of habitat only and does not constitute a survey for presence, though any incidental records of field signs of either water vole or otter were recorded if seen.



3.0 RESULTS AND DISCUSSION

3.1 Water vole

- 3.1.1 The suitability for water vole of the watercourses/ ditches at each survey location (or adjacent watercourses/ ditches) are summarised in **Table 1** below.
- 3.1.2 The survey locations were based on the proposed culvert crossing points at the time the surveys were undertaken. These locations and the associated habitat assessments are shown on **Figure 1**, appended to this report, with the survey location references listed in the first column of **Table 1** below.
- 3.1.3 Since the surveys were undertaken, the design of the Proposed Development has progressed, resulting in a number of culvert crossing points being removed from the Proposed Development (which have been greyed out in **Table 1**), as well as three-four additional proposed culvert crossing points being brought in, which had not been included in the surveys. Two Three of these additional culvert crossing points (numbers 21, 22 and 223) are the result of change 9 to the DCO Application, as set out in the Second Notification of Proposed Changes to the DCO Application [AS-015]. As a result of the changes during the iterative design process, the following survey locations now fall outside of the Order Limits and have therefore been removed from this report: C15 and C39. The remaining survey locations have not been renumbered. The proposed culvert crossing points are shown on ES Volume 3, Figure 3.6: Indicative Culvert Crossing Points [EN010157/APP/6.3REP2-093] and the reference numbers from that figure are shown in the second column of **Table 1** below, to allow for cross-referencing with the survey locations.

Table 1: Water vole habitat assessment summary

Survey location reference for this report	Culvert crossing point reference in ES Figure 3.6: Indicative Culvert Crossing Points [EN010157/APP/6.3R EP2-093]	Suitability for water vole*
C01	2	Good suitability (All Criteria)
C02	13	Good suitability (All Criteria)
C03	15	Optimal suitability (All Criteria)
C04	17	Good suitability (All Criteria)
C05	removed	Suitable but poor
C06	removed	Good suitability (All Criteria)
C07	removed	Good suitability (All Criteria)



Survey location reference for this report	Culvert crossing point reference in ES Figure 3.6: Indicative Culvert Crossing Points [EN010157/APP/6.3R EP2-093]	Suitability for water vole*
C08	9	Good suitability (All Criteria)
C09	8	Good suitability (All Criteria)
C10	3	Good suitability (All Criteria)
C11	removed	Negligible Value
C12	18	Good suitability (All Criteria)
C13	removed	Negligible Value
C14	removed	Suitable but poor
C16	removed	No Access
C17	removed	Negligible Value
C18	removed	Suitable but poor
C19	removed	Suitable but poor
C20	removed	Negligible Value
C21	removed	Negligible Value
C22	7	Suitable but poor
C23	removed	Suitable but poor
C24	removed	Suitable but poor
C25	removed	Good suitability (All Criteria)
C26	removed	No Access
C27	removed	No Access
C28	removed	Optimal suitability (All Criteria)
C29	5	Good suitability (All Criteria)
C30	4	Optimal suitability (All Criteria)
C31	removed	Good suitability (All Criteria)
C32	19	Optimal suitability (All Criteria)
C33	10	Negligible Value
C34	6	Good suitability (All Criteria)
C35	removed	Optimal suitability (All Criteria)
C36	removed	Negligible Value
C37	20	Negligible Value
C38	12	Good suitability (All Criteria)
C40	16	Good suitability (All Criteria)
C41	14	Negligible Value



Survey location reference for this report	Culvert crossing point reference in ES Figure 3.6: Indicative Culvert Crossing Points [EN010157/APP/6.3R EP2-093]	Suitability for water vole*
C42	1	Optimal suitability (All Criteria)
C43	11	Not assessed
C44	21	Not assessed
C45	22	Not assessed
<u>C46</u>	<u>23</u>	Not assessed

^{*}Where the survey location included multiple watercourses, the highest suitability has been presented here.

- 3.1.4 A total of six potential crossing points had optimal suitability (N.B. two of these have since been removed from the Proposed Development), 15 had good suitability (N.B. fivefour of these have since been removed from the Proposed Development), eight were suitable but poor (N.B. seven of these have since been removed from the Proposed Development, including C15), nine-ten were negligible value (N.B. six-seven of these have since been removed from the Proposed Development, including C39), and three seven remaining crossing points were not accessed at the time of the survey (N.B. three of these have since been removed from the Proposed Development).
- 3.1.5 The ditches recorded as having optimal or good suitability provide habitat for water vole and allow them to use these watercourses as habitat corridors. The results show that there are habitat corridors providing connectivity through the Site, and it is considered likely that water voles will use these if present at the Site. The ditches connected to the main areas of habitat will also likely be used by water vole. The areas recorded as negligible value are unlikely to be used by water voles.

3.2 **Otter**

- 3.2.1 The otter habitat classification of watercourses is shown on **Figure 2** appended to this report. The figure shows the main areas of habitat that provide connectivity into the Site. Otter are a mobile species that can cross land as well as swim along rivers, so they will make use of any cover, such as hedgerows, or ditches, if there is a destination for them. A destination may include a different river, a food source, or a resting place. It can be assumed that the areas identified as good habitat, provide an important habit corridor, but that otter could also make use of any other habitats on the Site.
- 3.2.2 No otter resting places were observed during the survey. The banks of the rivers surveyed were well maintained earth banks, to control the water flow, and generally did not contain holes or hollows that would be suitable for otter



holts. However, an exhaustive search for otter holts was not undertaken throughout the entire Site, and it could be possible that there are suitable areas, such as overturned boats, disused badger setts, drainage pipes/culverts or other features that could provide cover for an otter resting site. Otters also use areas of cover such as woodlands and scrub which are located away from the river as resting sites, and these areas have not been exhaustively searched.

3.2.3 Whilst evidence of otter was not found during the survey, suitable habitat corridors and resting places exist within the Site, therefore the presence of otters could not be discounted. As such, otters pose a potential constraint that will need to be considered during the construction works.



4.0 CONCLUSIONS

- 4.1.1 The results presented in this report provide an overview of the habitats recorded on Site.
- 4.1.2 The potential crossing points surveyed for this report provide a good sample of the ditches across the Site and provide a good representation of the suitability of habitat for water voles throughout the Site.
- 4.1.3 The condition of ditches changes throughout the seasons, which may affect water vole habitat suitability. This survey was undertaken in late summer; the condition of ditches is likely to be different in spring, when water voles begin breeding. The ditches considered to be of negligible suitability for water vole are unlikely to change; however, the optimal, good, and suitable but poor ditches may change condition. Any further assessment based on the data in this report should take this into account, when considering the validity of the data.
- 4.1.4 The survey has highlighted areas of important otter habitat corridors, but does not discount the potential for otter resting places to be present on the Site.
- 4.1.5 The suitability of the Site for otters recorded in this report is unlikely to significantly change throughout the seasons.
- 4.1.6 This report has been written to provide information for ecological impact assessment to be undertaken within the EIA process (see **ES Volume 2**, **Chapter 7: Biodiversity [EN010157/APP/6.2]** for further information). The level of further survey will depend on the impact to the ditches and watercourse. Where impacts can be avoided, no further surveys will be required. As a minimum, a further water vole and otter presence/absence survey will be required up to 200m up and downstream of any proposed crossing points where impacts could occur, comprising a fingertip search for field signs, water vole burrows, and otter holts.
- 4.1.7 Otter surveys can be undertaken at any time, however if any holts are discovered the best time to monitor otter holts is December to May (Findlay et al 2022). Water vole surveys can only be undertaken April to September inclusive. Two water vole surveys are required to prove absence, one survey undertaken in Mid-April to the end of June, and one July to September (Dean 2016).
- 4.1.8 **ES Volume 2, Chapter 7: Biodiversity [EN010157/APP/6.2]** assesses the potential impact of the Proposed Development on water vole and otter and provides recommendations for appropriate mitigation including preconstruction surveys.



REFERENCES

Dean (2021). Water Vole Field Signs and Habitat Assessment: A Practical Guide to Water Vole Surveys. Pelagic Publishing

Dean, M., Strachan, R., Gow, D., Andrews, R. (2016). The water vole mitigation handbook, the mammal society mitigation guidance series.

Chanin, P. (2003). Ecology of the European Otter. Conserving Natura 2000, Rivers Ecology Series No. 10. English Nature, Peterborough.

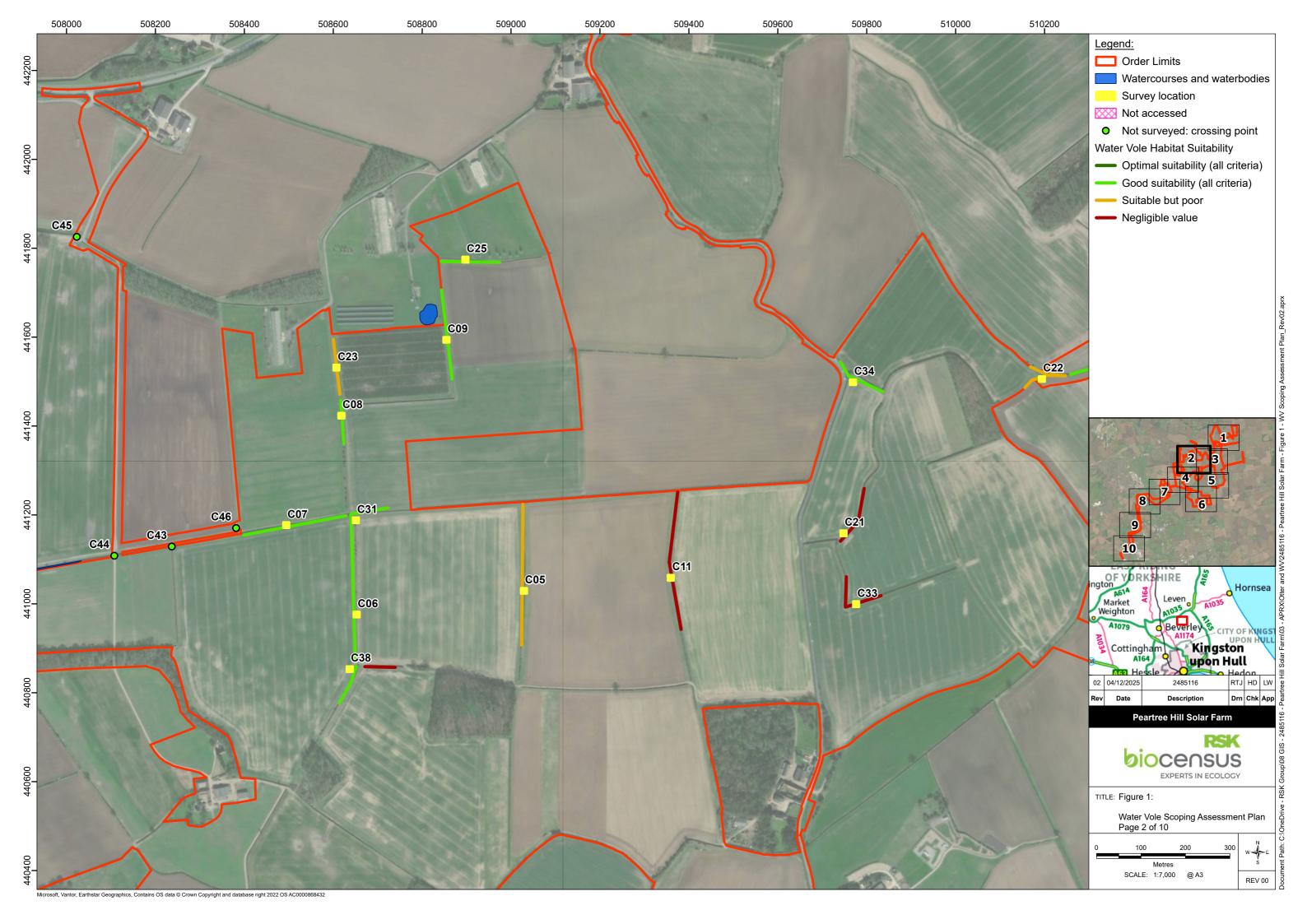


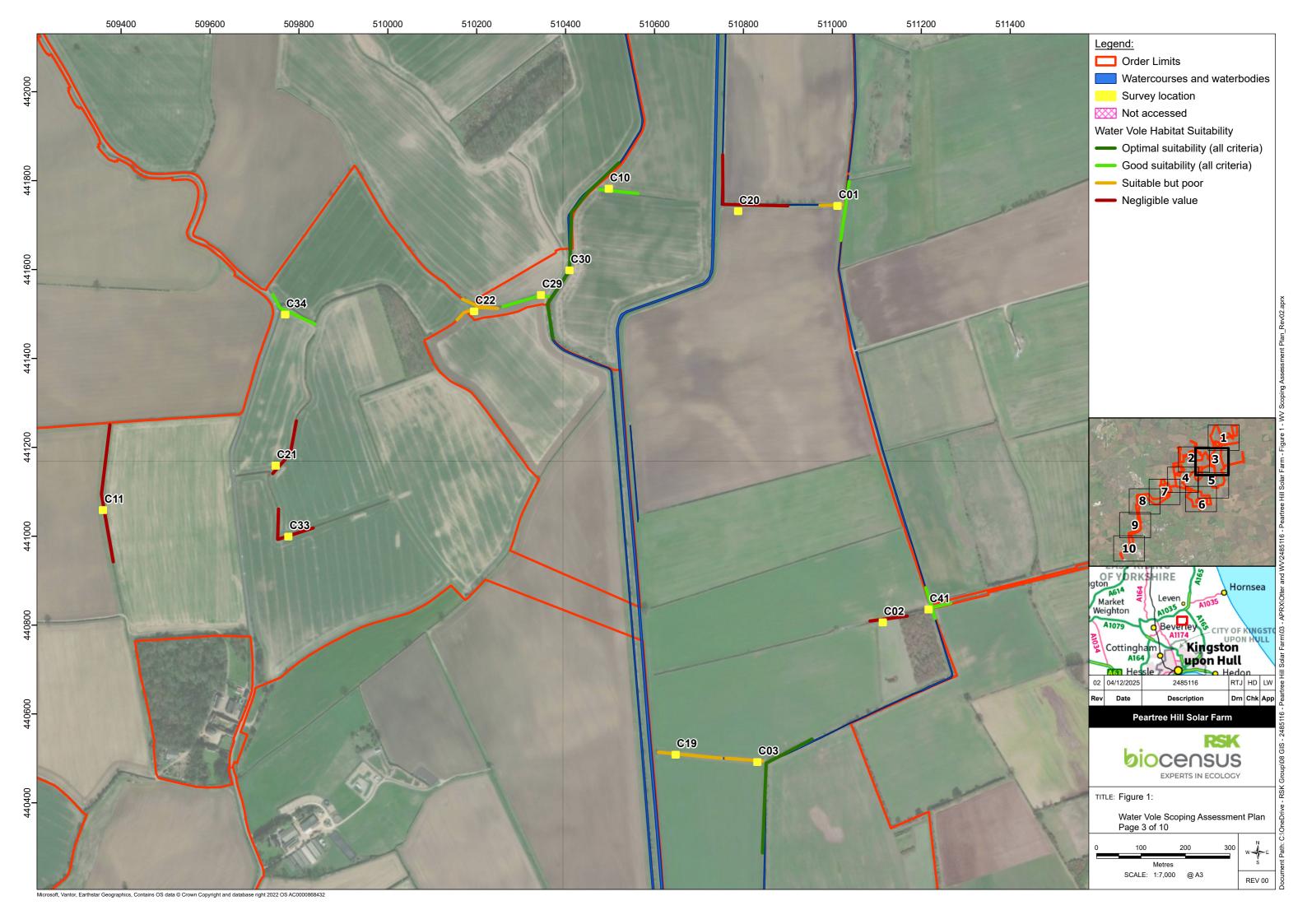
FIGURES

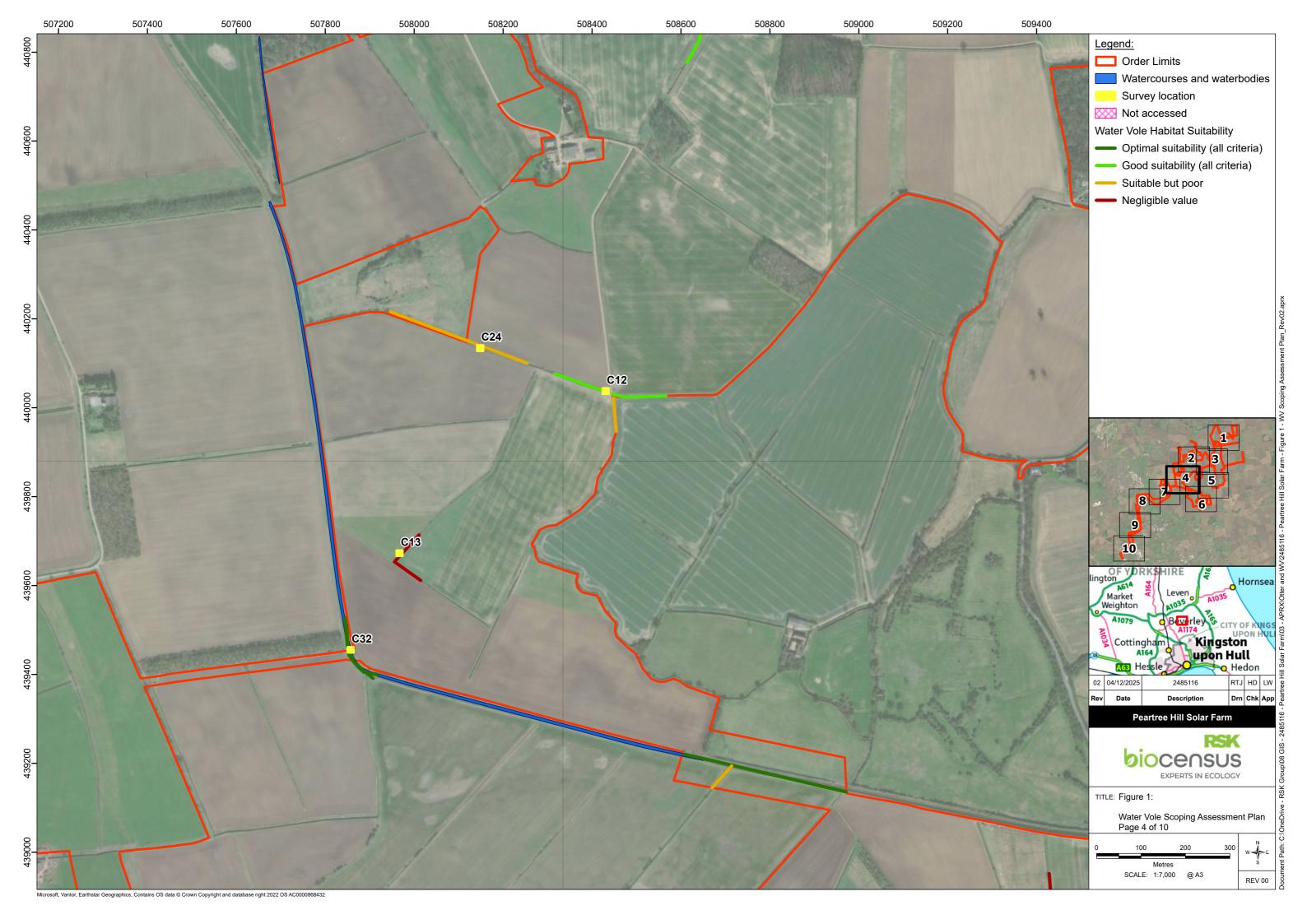
Figure 1: Water Vole scoping assessment plan

Figure 2: Otter scoping assessment plan

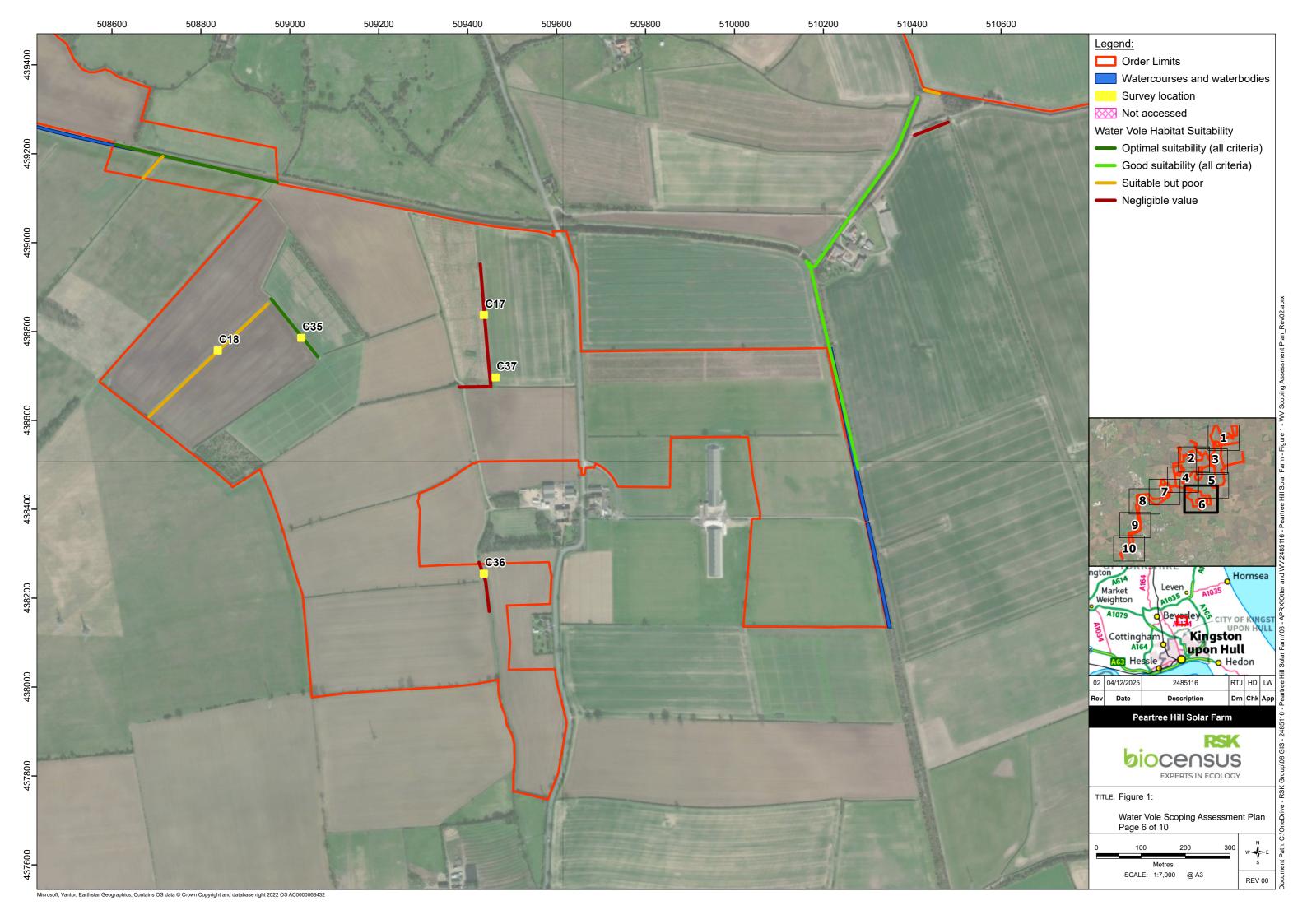


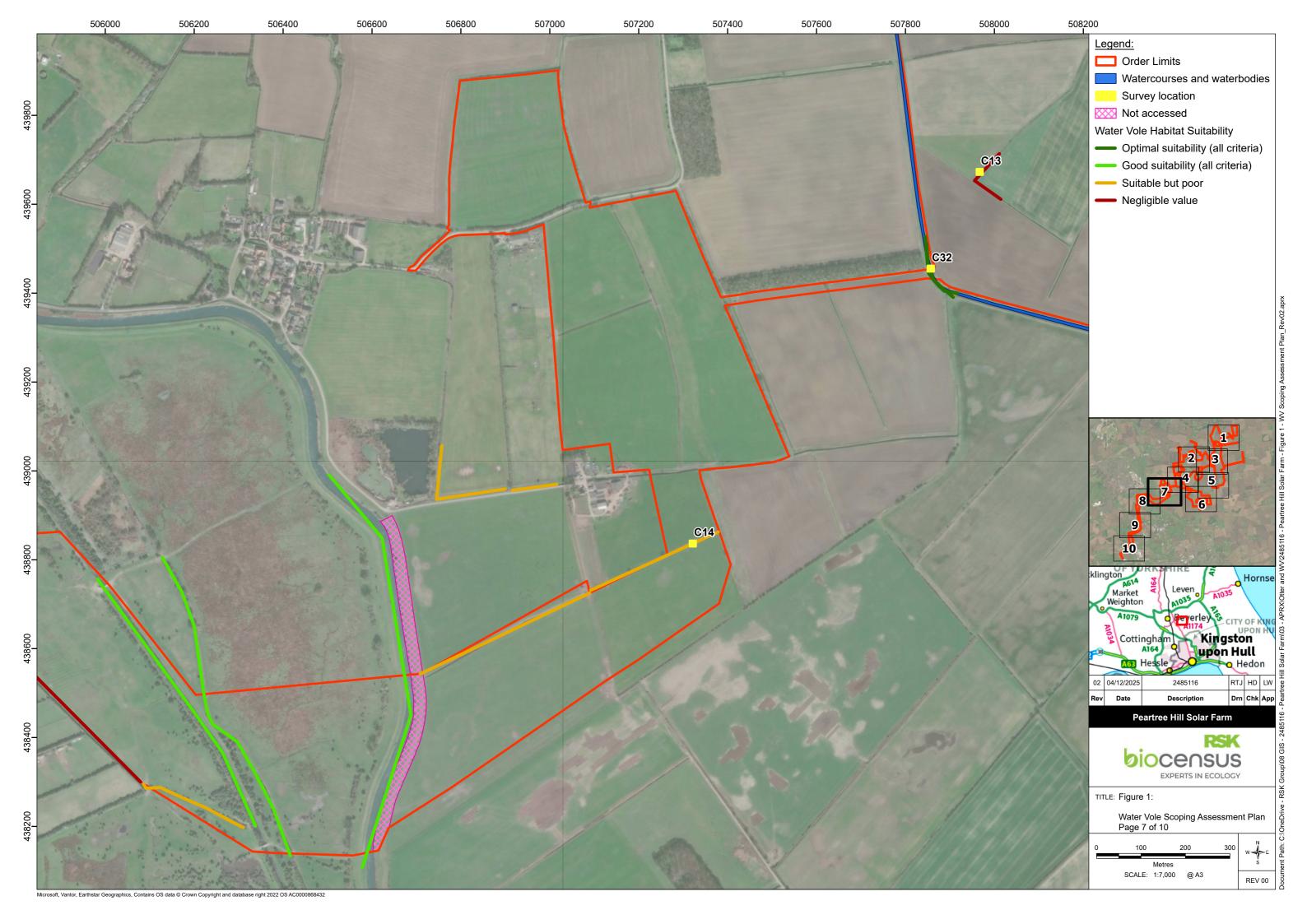


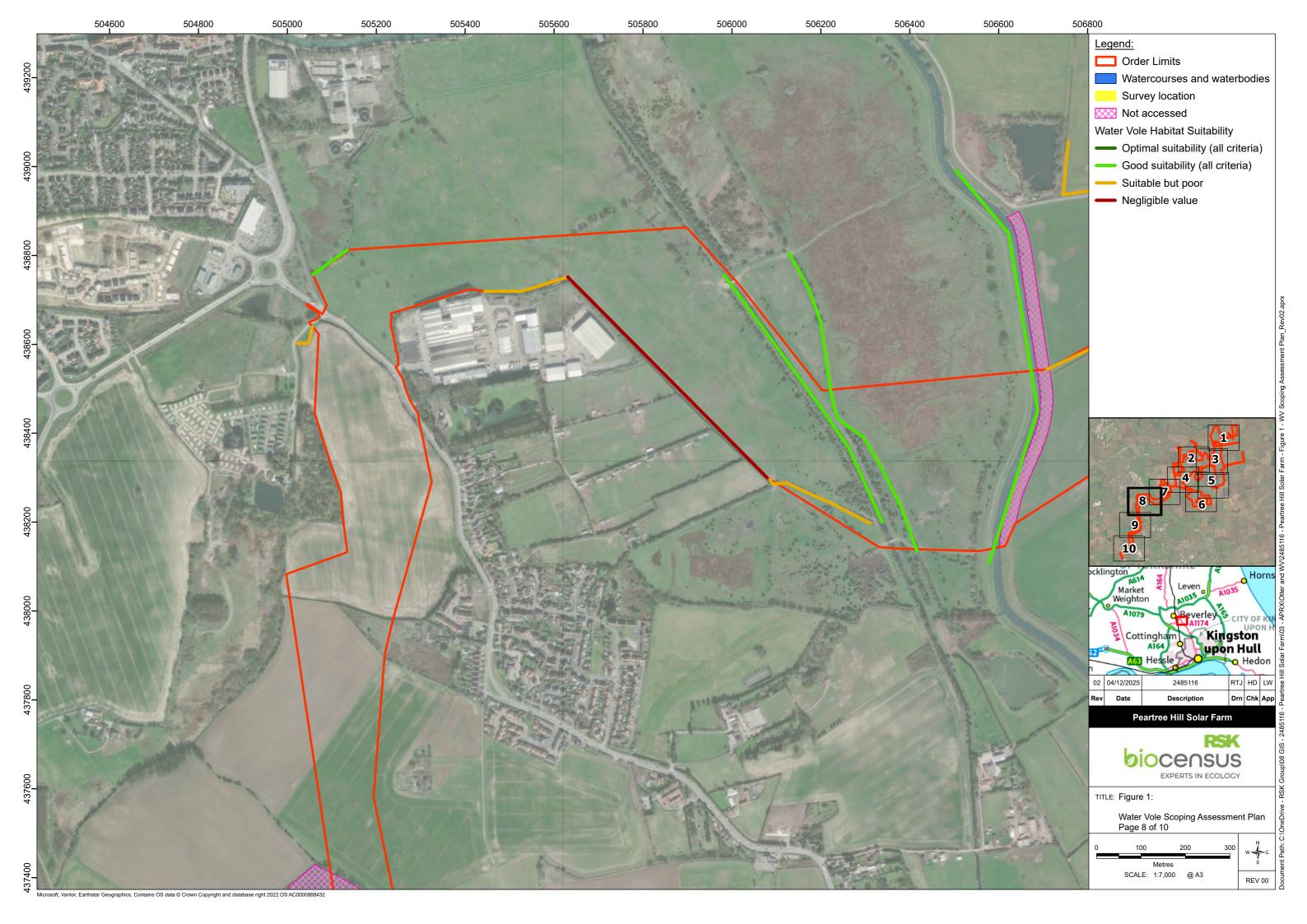


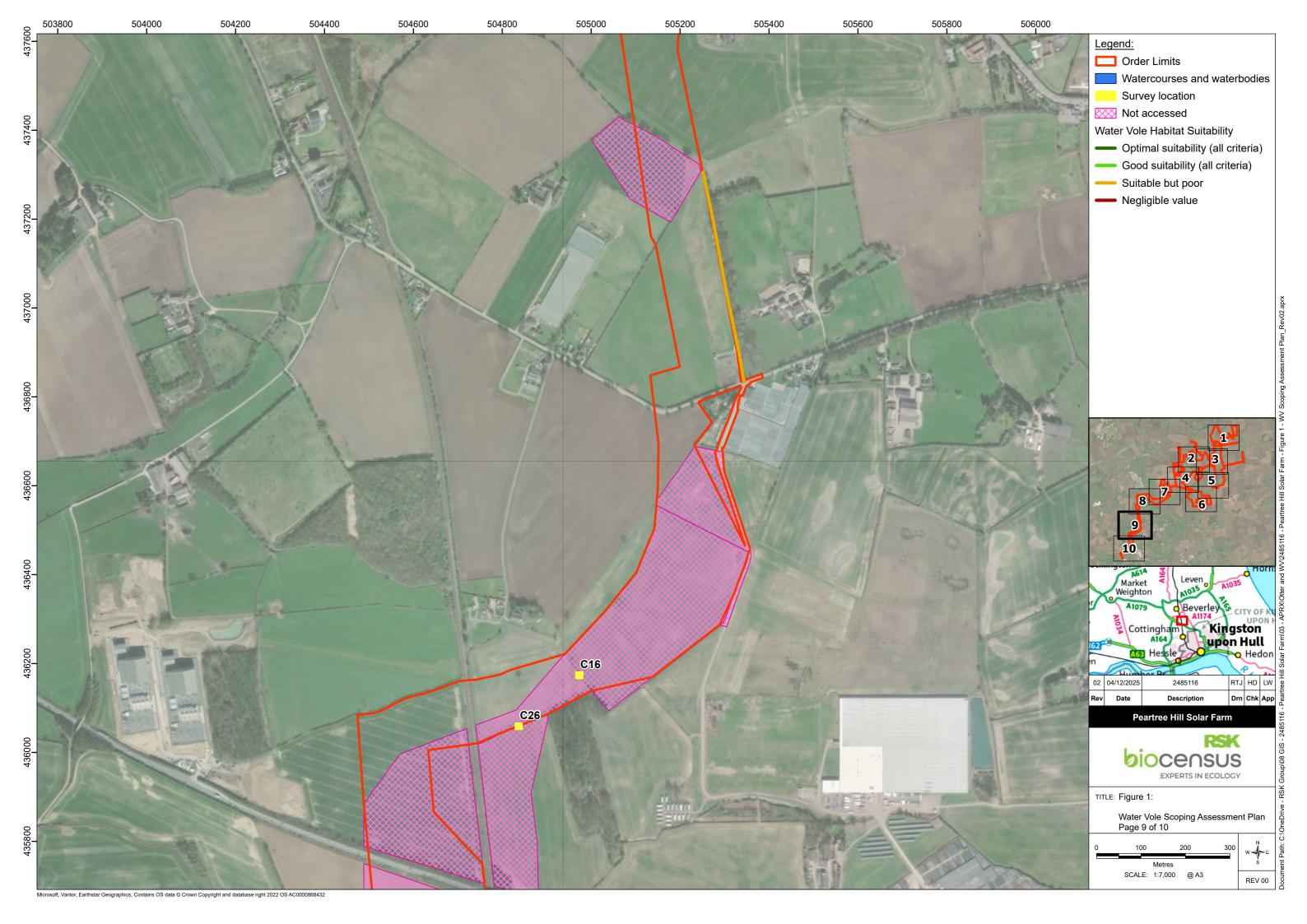


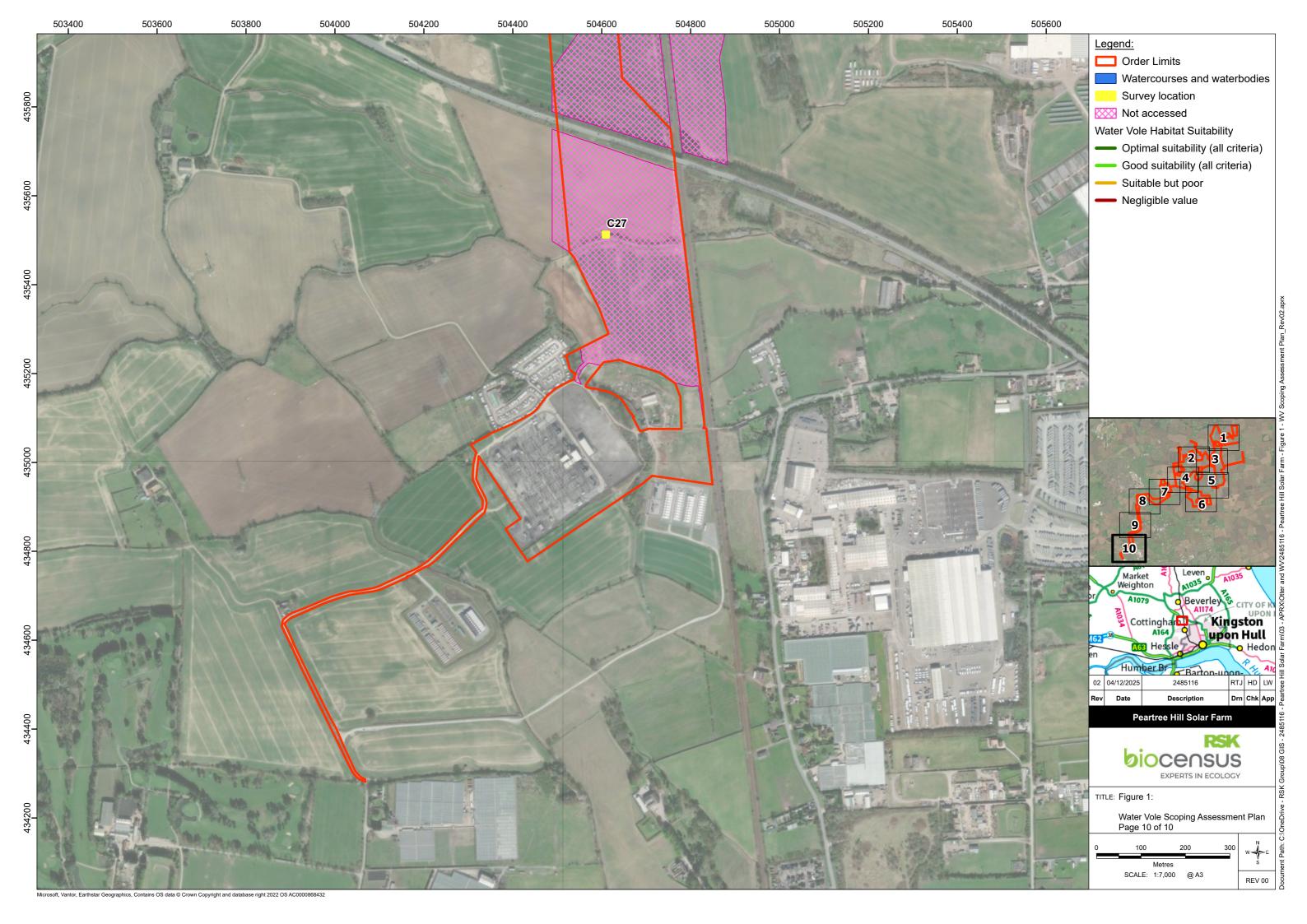




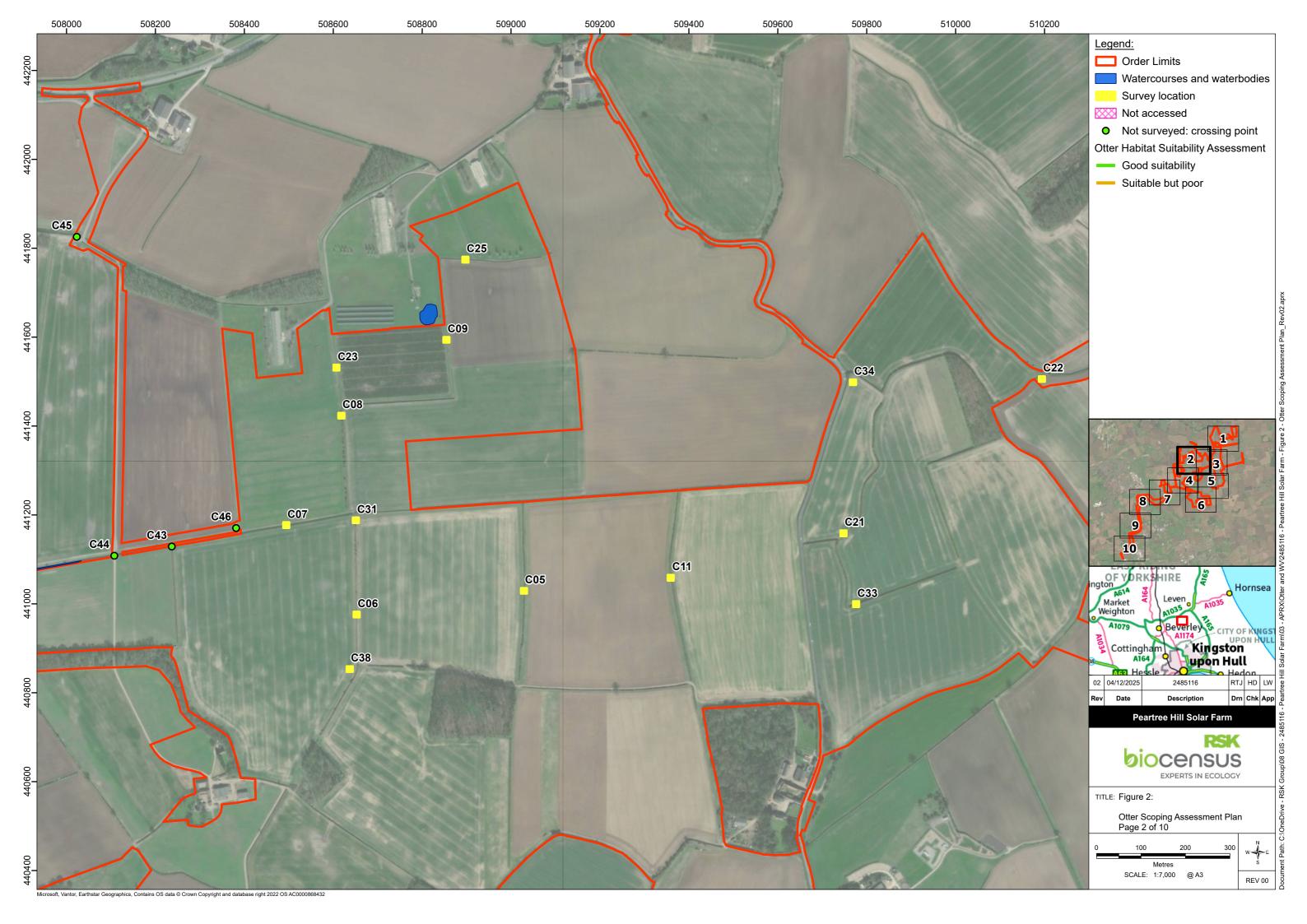








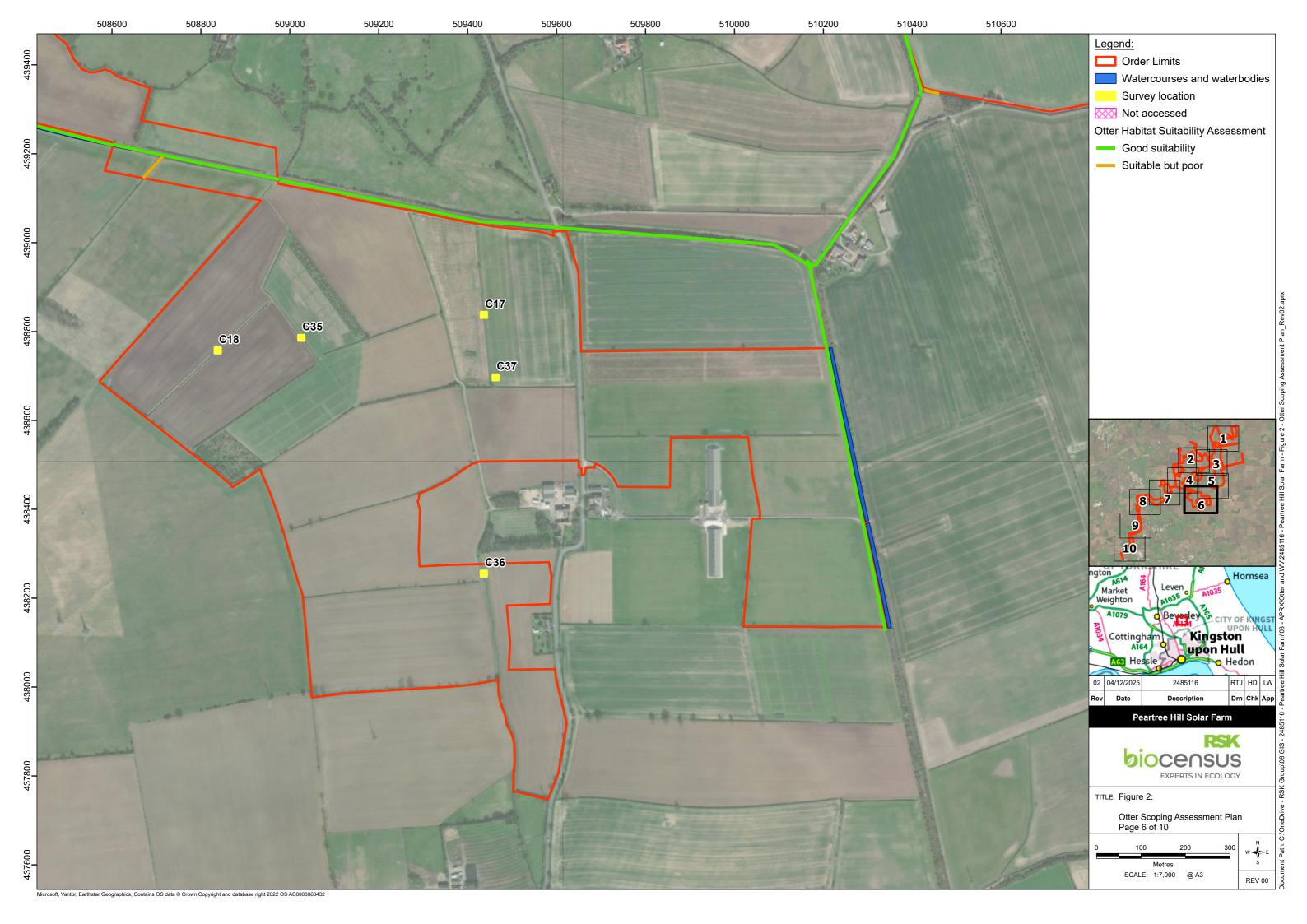


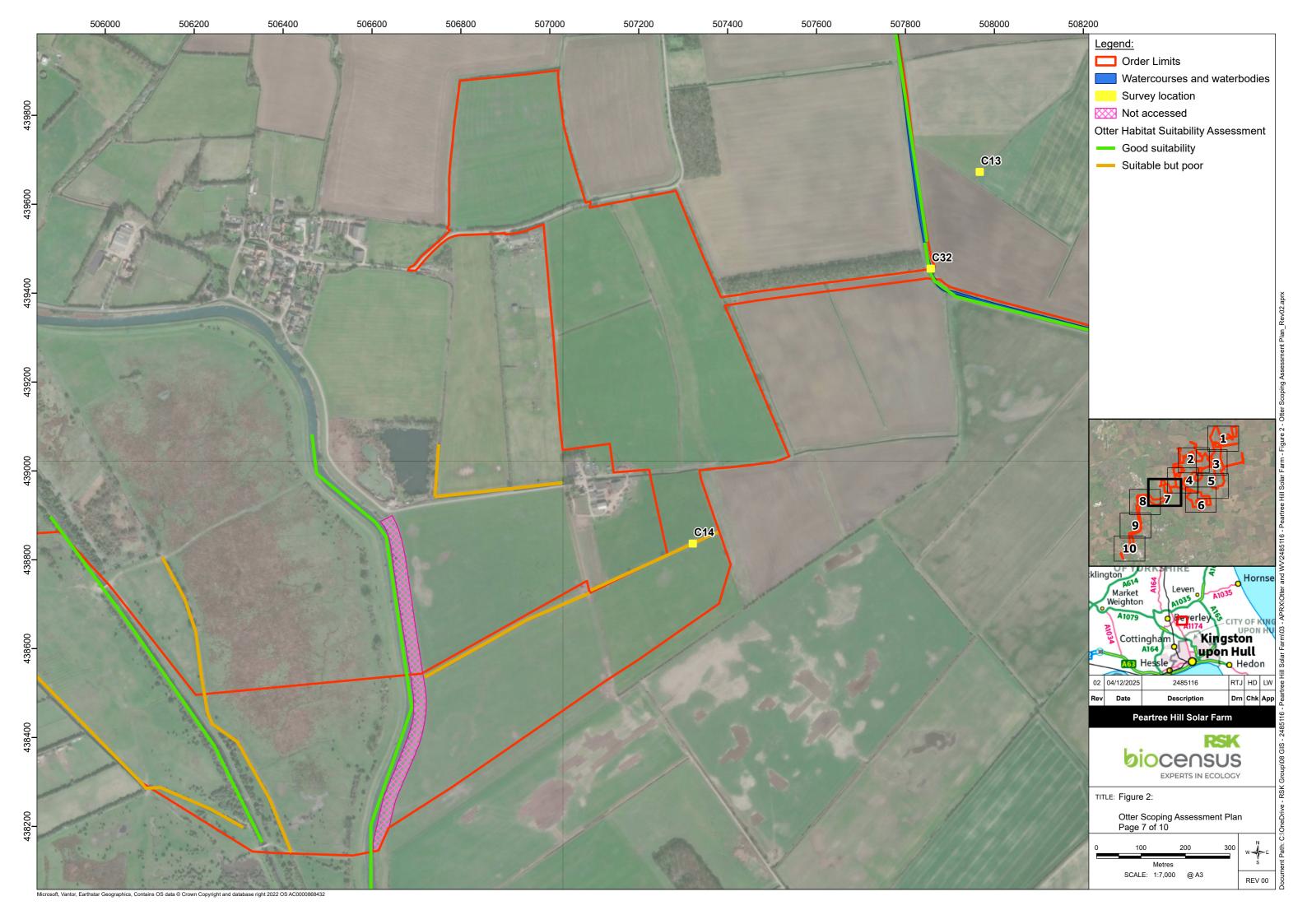




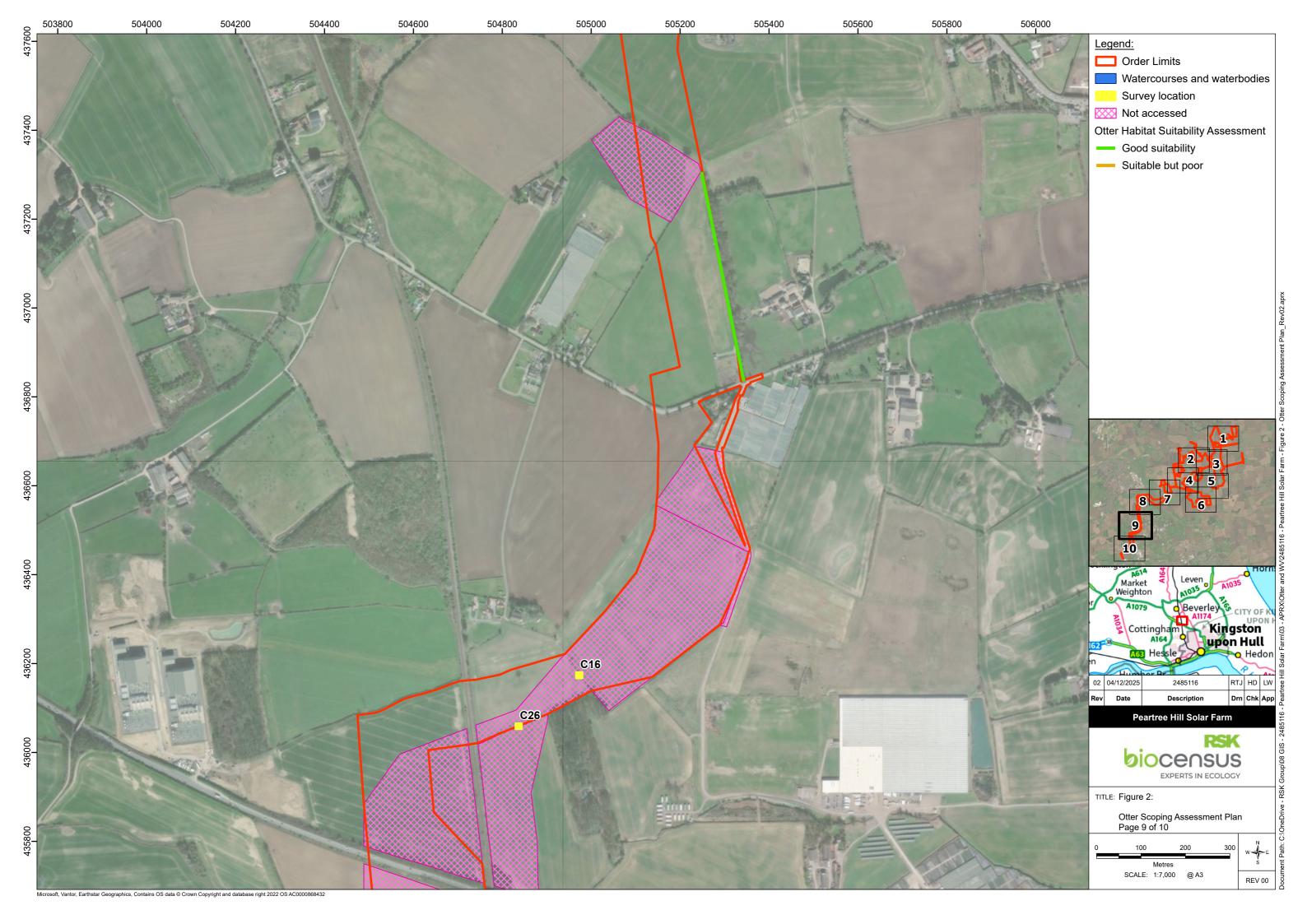


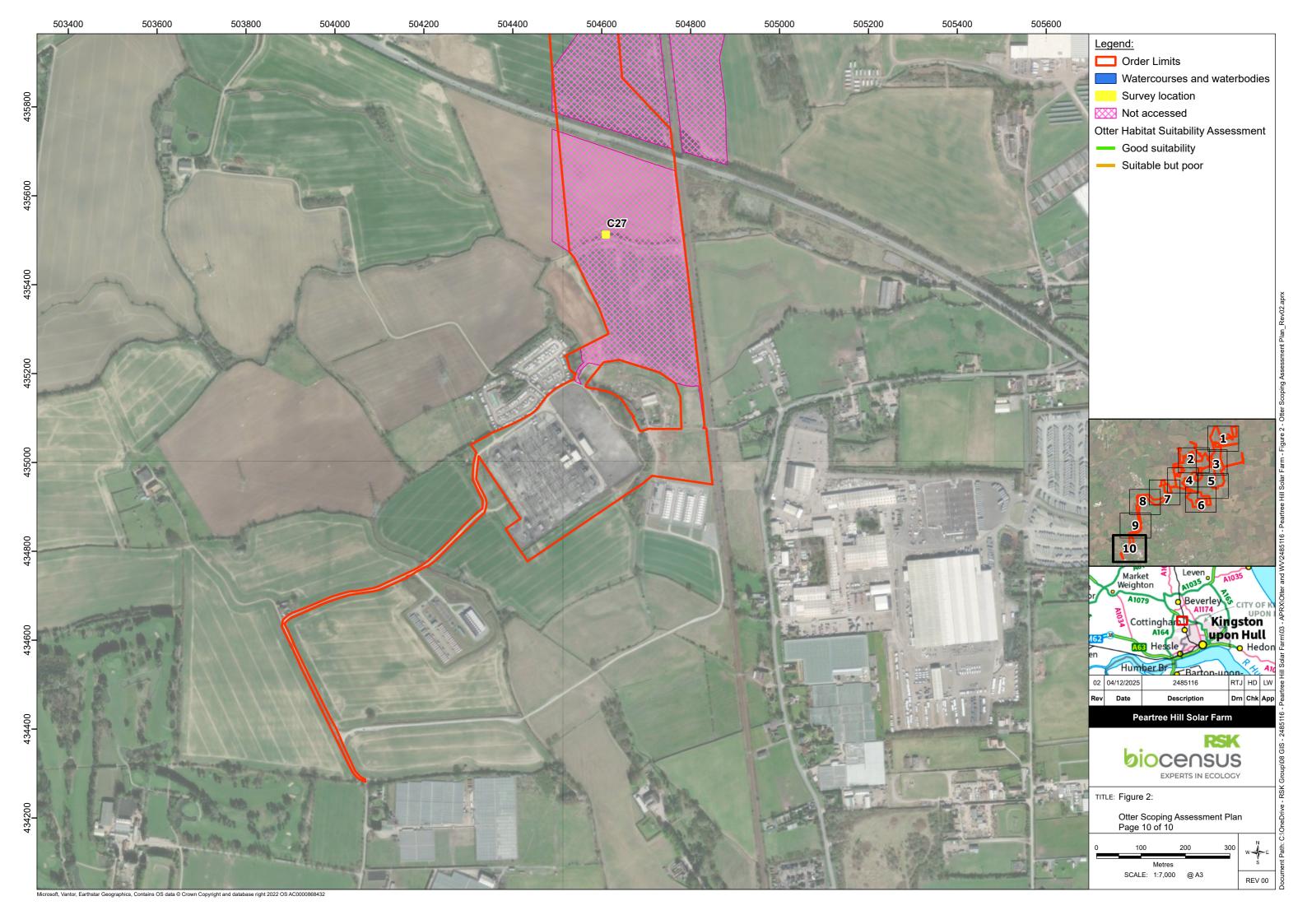












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