

# Cottam Solar Project

## Environmental Statement

### Appendix 9.6: Otter and Water Vole Survey

Prepared by: Clarkson & Woods Ltd.  
January 2023

PINS reference: EN010133  
Document reference: APP/C6.3.9.6  
APFP Regulation 5(2)(a)



**OTTER AND WATER VOLE SURVEY REPORT**  
**COTTAM SOLAR PROJECT**

carried out by



commissioned by

**COTTAM SOLAR PROJECT LTD.**

**OCTOBER 2022**



# OTTER AND WATER VOLE SURVEY REPORT

## COTTAM SOLAR PROJECT

### CONTENTS

<b>1</b>	<b>INTRODUCTION</b> .....	<b>3</b>
1.2	Aims, Scope and Limitations.....	3
1.3	Site Description Summary.....	3
1.4	Quality Assurance.....	4
1.5	Assessment Scope / Consultation .....	4
<b>2</b>	<b>METHODOLOGY</b> .....	<b>6</b>
2.1	Desk Study .....	6
2.2	Field Surveys .....	6
<b>3</b>	<b>RESULTS</b> .....	<b>8</b>
3.1	Desk Study Information.....	8
3.2	Field Survey Results .....	8
<b>4</b>	<b>ECOLOGICAL EVALUATION</b> .....	<b>25</b>
4.2	Potential Sources of Impact.....	26
4.3	Potential Mitigation, Compensation and Enhancement Options .....	26
<b>APPENDIX A: WILDLIFE LEGISLATION &amp; SPECIES INFORMATION</b> .....		<b>27</b>
<b>APPENDIX B: DITCH AND WATERCOURSE REFERENCE NUMBERS</b> .....		<b>30</b>

Project title:	Cottam Solar Project		
Document title:	Otter and Water Vole Survey Report	Project number:	7479
Client:	Cottam Solar Project Ltd.	Author:	Joel Wright
Version 1	Final Draft	Issued on:	10/10/22
Quality Assurance	Checked by:	Approved by:	
	Harry Fox	Tom Clarkson	

The information, data and advice which has been prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions. This report and its contents remain the property of Clarkson and Woods Ltd. until payment has been made in full.



## 1 INTRODUCTION

- 1.1.1 Clarkson and Woods Ltd. was commissioned by Cottam Solar Project Ltd to carry out otter and water vole surveys for the Cottam Solar Project. as the Scheme broadly comprised four Sites: Cottam 1, Cottam 2, Cottam 3a and Cottam 3b situated in the West Lindsey District of Central Lincolnshire. These are referred to hereafter as 'the Sites', or individually as given above. Proposals comprise the development of an NSIP-scale solar park, containing solar energy production and storage components.
- 1.1.2 Physical investigations of ditches and watercourses at the Sites to look for evidence of riparian mammals and to appraise their suitability to support them were carried out first in September and October 2021 and again in April and May 2022. Surveys followed a scope that was agreed through consultation with Natural England and the Lincolnshire Wildlife Trust following the survey methodology specified in the Water Vole Mitigation Handbook<sup>1</sup>.
- 1.1.3 Unless the client indicates to the contrary, information on the presence of species collected during the surveys will be passed to the county biological records centre in order to augment their records for the area. This is in line with the CIEEM code of professional conduct<sup>2</sup>.

### 1.2 Aims, Scope and Limitations

- 1.2.1 Surveys for otters and water voles were undertaken to establish species presence or likely absence to ensure that the works pertaining to the solar Sites are carried out in line with relevant legislation, and to inform an appropriate approach to mitigation during the construction and operational phases of the Scheme.
- 1.2.2 This report details the methods and results of the surveys and provides an overview of the potential impacts on otters and water voles that could result from the proposals, to inform the layout of the Scheme.
- 1.2.3 This information will be used within the eventual Cottam Solar Project Environmental Statement to:
- Inform the ecological evaluation of the habitats used by water voles and otters;
  - to characterise the impacts on them considered likely to result from the Scheme;
  - to establish any avoidance and mitigation measures required to minimise impacts; and
  - to determine any residual effects on water voles and otters post-mitigation which are considered likely to occur.
- 1.2.4 While the installation of below-ground electrical cabling will be required beyond the boundaries of the Sites in order to connect the disparate land parcels both to one another and to the National Grid, relevant and proportionate ecological baseline information for the cable route element will be presented within a separate document.

### 1.3 Site Description Summary

- 1.3.1 The Sites are spread over an approximately 17Km area stretching from south to north between the settlements of Coates and Thorpe in the Fallows (Cottam 1), Corringham (Cottam 2) and Blyton (Cottam 3a and 3b) as shown in Figure 1 below. For the purposes of this document Cottam 1 was further split into three distinct areas, namely Coates North, Coates South and Coates West, as shown in Figure 1.
- 1.3.2 The Sites all predominantly comprise large, open and generally flat arable fields characterised by winter-sown cereal crops, bounded by a network of managed hedgerows and ditches with narrow field margins, where present.
- 1.3.3 These Sites' habitats are very much typical of the surrounding landscape which is dominated by arable farmland interspersed with small settlements and farmsteads linked by minor and single track roads. The surrounding landscape is mostly flat but becomes more undulating north past Blyton and rises to the east of the Sites at the 'Lincoln Cliff' some 4-5Km away which is a significant north-south escarpment. The River Trent

---

<sup>1</sup> Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series).

<sup>2</sup> Code of Professional Conduct. CIEEM, January 2019.



is located approximately 5km west of the Sites as it flows north towards the Humber Estuary, itself some 27km north of Cottam 3a.

- 1.3.4 While no woodland is present within the Sites, several small stands of managed and unmanaged woodland are present adjacent and in the surrounding landscape, often the result of historical game management. Standing water is generally absent from the Sites and the surroundings following the in-filling of traditional livestock drinking ponds, save for a very small number of agricultural pools/pits, decoy ponds or managed recreational fisheries. Flowing water occurs sparsely, centred on the minor River Till (in the case of Cottam 1, and Cottam 2 via the Corringham and Yarthorpe Becks) and River Eau (around Cottam 3a via the Northorpe Beck) and their various feeder streams and managed agricultural drainage ditches which regularly dry out.

#### 1.4 Quality Assurance

- 1.4.1 All ecologists employed by Clarkson and Woods are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow the Institute's Code of Professional Conduct<sup>3</sup> when undertaking ecological work.
- 1.4.2 The competence of all field surveyors has been assessed by Clarkson and Woods with respect to the CIEEM Competencies for Species Survey (CSS)<sup>4</sup>.
- 1.4.3 This report has been prepared in accordance with the relevant British Standard: *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*<sup>5</sup>. It has been prepared by an experienced ecologist who is a member of CIEEM. The report has also been subject to a two stage quality assurance review by appropriately experienced ecologists who are full members of CIEEM.

#### 1.5 Assessment Scope / Consultation

- 1.5.1 The following statutory bodies were consulted to agree the appropriate scope of the otter and water vole surveys for the project.
- **Natural England** – Advisor assigned at onset of consultation. Paid-for Discretionary Advice Service available outside of statutory consultation process.
  - **Lincolnshire Wildlife Trust** – Principal adviser to West Lindsey District Council on ecological matters.
- 1.5.2 No concerns were raised by these statutory bodies regarding the scope of surveys discussed.

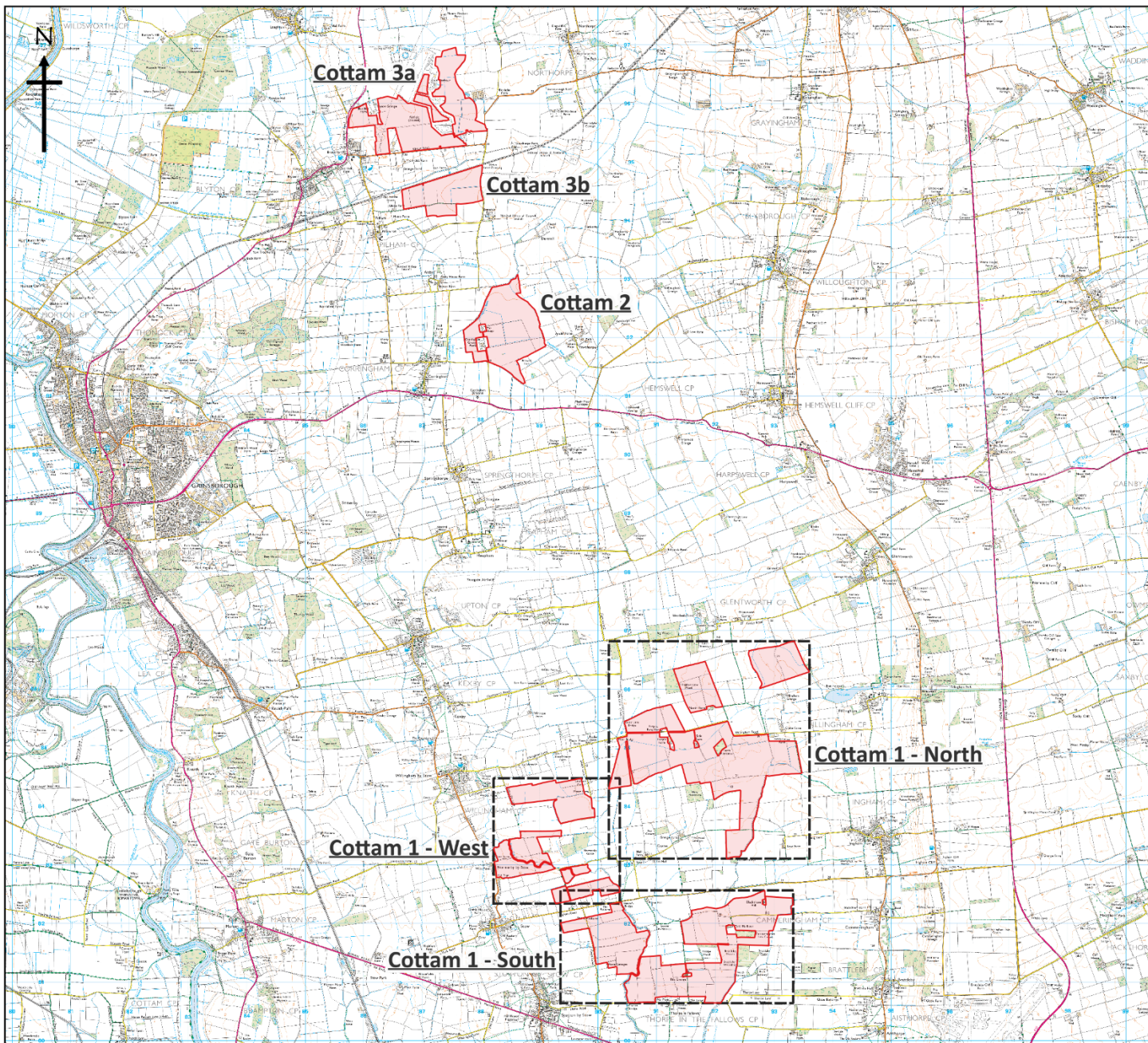
---

<sup>3</sup> CIEEM (2013). *Code of Professional Conduct*. [REDACTED]



<sup>4</sup> CIEEM (2013). *Competencies for Species Survey*. [REDACTED]

<sup>5</sup> The British Standards Institution (2013). *BS42020: 2013 – Biodiversity: Code of Practice for Planning and Development*. BSI Standards Ltd.





**Key:**

-  Site red line boundaries
-  Site bounding box



Project  
**Cottam Solar Project**

Title  
**Figure 1 - Cottam sites**

Date  
**03/10/2022**

Scale  0 1 2 3 4 km



## 2 METHODOLOGY

### 2.1 Desk Study

- 2.1.1 The Lincolnshire Environmental Records Centre (LERC) was consulted for records of otters and water voles within 2km of the Site.
- 2.1.2 Clarkson and Woods' own database of ecological records derived from past survey work was also consulted for further locally-relevant data.
- 2.1.3 The Natural England/DEFRA web-based MAGIC map database was also consulted for records of European Protected Species (EPS) licences issued for mitigation projects concerning otter within 5km of the Site.
- 2.1.4 The data presented within this report constitutes a summary of the data obtained from the local records centre. Should additional detail be required on any of the records described within this report Clarkson and Woods Ltd. should be contacted.

### 2.2 Field Surveys

- 2.2.1 At the time of survey, no specific impacts to watercourses had been identified owing to the stage of Scheme design, therefore it was determined that all ditches across the Sites should be investigated for their habitat suitability to some degree. Surveys comprised the evaluation of habitat suitability for all ditches and watercourses on and adjacent to the Sites, as well as further, detailed 'spot checks' for field signs of the presence of riparian mammals within the channels of those ditches determined to provide a reasonable level of likelihood of presence.
- 2.2.2 All ditches and water courses present at the Sites were inspected during autumn in 2021 (22<sup>nd</sup> September - 5<sup>th</sup> October 2021) with a subset of these (containing ditches considered to be of at least poor suitability for riparian mammals) revisited in spring 2022 (26<sup>th</sup> April - 10<sup>th</sup> May 2022).
- 2.2.3 Considering the practicalities of surveying an entire ditch network of some 69km, of which at least half of which comprised at least regularly-wetted channels, it was decided that in order to ensure a reasonable effort of survey across the Sites, surveyors completed spot checks between every 50-100m to search for otter and water vole field signs within watercourses. These spot checks involved entering the watercourse to carry out an intensive search of bankside and water-edge habitat for field signs over approximately a 10m length. In this way, an aggregate total of between 3-4km of watercourse was intensively inspected, distributed across the Sites. In addition, particular locations containing features seen to be of potential value to otters for holt-creation or sprainting were searched, such as at the bases of mature trees or at bridges or exposed bankside features.
- 2.2.4 Survey areas also included 200m upstream and downstream beyond Site boundaries where access was available.
- 2.2.5 Surveys followed good practice guidelines contained within Natural England Guidance<sup>6</sup> (in the case of otters) and Dean et al 2016 in accordance with criteria developed by Strachan et al (2011)<sup>7</sup> (in the case of water voles). Experienced surveyors assessed watercourses and areas of wetland on Site for their suitability for otters. This included an assessment of water depth, flow-rate, prey availability, water quality, vegetation cover and sheltering opportunities.
- 2.2.6 The presence of water vole droppings (latrines) was the only field sign used to confirm the presence of water voles, although supplemental evidence also included feeding remains, burrows and footprints. Field signs of typical water vole predators such as mink and domestic cats was also recorded. All such field signs were mapped and described when they were recorded.

---

<sup>6</sup> Natural England (updated 15/10/14). *Otters: surveys and mitigation for development projects*.

<sup>7</sup> Strachan R., Moorhouse T.P. & Gelling M. (2011) *Water Vole Conservation Handbook* 3rd Edition. Wildlife Conservation Research Unit, Oxford.



- 2.2.7 Otter field signs searched for included spraints (droppings), footprints, slides, paths, feeding evidence, holts (underground resting places) or couches (temporary resting places). Mud and sand exposures were searched for spraints and footprints.
- 2.2.8 All information was collected using tablet-based proforma which were georeferenced for later mapping. Each habitat suitability assessment considered the following factors:
- Water quality
  - Water-level regime
  - Channel dimensions
  - Bank type and material
  - Vegetation for cover and food sources (water voles)
  - Shading and presence of trees/scrub
  - Predation (water voles) and competition
  - Habitat management
- 2.2.9 The above criteria were then used to classify the suitability of watercourses separately for water voles and otters as follows:
- Optimal – excellent habitat with good cover, food sources and other elements that would allow a typical water vole population to thrive throughout the year, or form part of an otter core home range/territory.
  - Good - habitat with all the essential elements necessary for sustaining a residual water vole or otter population.
  - Suitable but poor - habitat with most of the essential features but with some factors likely to prevent suitability throughout the year.
  - Negligible - habitat lacking one or more crucial elements for use by water voles or otters. This category does not necessarily preclude the habitat being used for dispersal or occasional occupation/foraging, especially where connected to other suitable habitat, but habitat highly unlikely to sustain a residual population of this species.
  - Usually dry – ditches which were considered highly likely to be dry most of the year and as such were not subject to spot checks in autumn 2021 or a second inspection in spring 2022. Again, this does not necessarily preclude their occasional use for dispersal, especially for otters which have large home ranges.

### **Limitations**

- 2.2.10 Otters have no defined breeding season and the breeding holt is kept deliberately obscure by the female so locating one can be difficult and time consuming.
- 2.2.11 Where water voles live at low densities or a Site is at the edge of their range, field signs can be difficult to locate. Furthermore, water vole populations may expand over time and consequently may migrate onto Site after surveys are completed.





### 3 RESULTS

#### 3.1 Desk Study Information

##### Offers

- 3.1.1 For **Cottam 1**, ten records of otters were present within the red line boundary, all within Coates South, showing association with the River Till and tributaries. A further 15 records were present within 250m of Coates West.
- 3.1.2 No records of otter within 2Km of **Cottam 2** were present in the Desk Study data.
- 3.1.3 For **Cottam 3a and Cottam 3b**, there were four pre-2000 records of otter approximately 2Km from the Sites.
- 3.1.4 Otter is a Species of Principal Importance under the NERC Act (2006).

##### Water Voles

- 3.1.5 For **Cottam 1**, 12 records of water vole were present within the red line boundary, all within Coates North, showing association with ditch network on Site. A further 19 records were present within 250m of the Site showing association with the ditches and also the River Till. 82 further records are located between 250m and 2km from the Site. Most records were made post-2000.
- 3.1.6 For **Cottam 2**, 14 records of water vole were present, six of which were located within the red line boundary between 2002 and 2011. Two were located within 250m of the Site.
- 3.1.7 For **Cottam 3a and Cottam 3b**, 31 records of water vole were present, all located at least 250m from the Sites.
- 3.1.8 Water vole is a Species of Principal Importance under the NERC Act (2006) and listed on the Lincolnshire BAP.

#### 3.2 Field Survey Results

##### Offers

- 3.2.1 Watercourses and ditch reference numbers that are referred to in the text below are provided in Appendix B. Results are depicted on Figures 2-6 overleaf. Where no ditch habitat classification is shown, no ditch was present at that location. Table 1, below, shows the breakdown of the ditch network within the Survey Area which were observed as being suitable to otters as well as the presence of observed field signs. This information is discussed in more detail in subsequent paragraphs.
- 3.2.2 Habitat for otters conducive to forming part of a core territory or sustaining a population was restricted to river corridors, wet ditches and streams present on or adjacent to the Sites. It is considered that otters may use poor or unsuitable habitat for sporadic dispersal, especially where adjacent to more suitable habitat.

**Table 1. Otter Field Survey Results Breakdown**

Site	Total Length of Ditch Network (m)	%age of Ditch Network 'Suitable but Poor' or Better	%age of Ditch Network Containing Otter Field Signs
Cottam 1 – North	33,748	23	10.1
Cottam 1 - South	33,339	24	1.7
Cottam 1 – West	20,693	21	0
Cottam 2	11,736	28	1.8
Cottam 3a	18,349	18	2.4
Cottam 3b	8,074	0	0

##### Cottam 1

- 3.2.3 This Site bordered the River Till and several substantial tributaries across **Cottam 1** North, South and West.



### *Cottam 1 North*

- 3.2.4 The results of the otter survey for Cottam 1 North are presented in Figure 2 below. Overall, relatively few watercourses offered typically suitable habitat for otter, although roughly half of those which did were found to contain otter field signs, indicating relatively widespread movement by otter within the wetted ditch network.
- 3.2.5 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for otter several of which are more substantial ditches that are tributaries of the River Till. The majority were recorded as being usually dry and the ditch associated with H36 was assessed as being of negligible suitability.
- 3.2.6 A number of ditches and ditches associated with hedgerows were assessed as providing suitable but poor habitat for otters including D1, D3, D4, D7, D10, D11, D13, D16, D20, D21, D22, H2, H37 and H63. A number of otter field signs were recorded within several of these 'suitable but poor' ditches including spraints recorded within D5, D7, D10 and a ditch associated with H20. Cavities suitable for use by otter and a couch were also recorded within D3.
- 3.2.7 Ditches assessed as being of 'good' suitability for otter were recorded at D6, D17, D23, D24 and spraints were recorded along D6 and D24 and a cavity suitable as a resting place was recorded along D6.

### *Cottam 1 South*

- 3.2.8 The results of the otter survey for Cottam 1 South are presented in Figure 3 below. Overall, a minority of the watercourses were of any typical suitability for otter, with only some of these bearing otter field signs, although these were widely spread, indicating extensive dispersal by otters.
- 3.2.9 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for otter and the Site was bisected by the River Till which was a significant river providing optimal habitat for otter.
- 3.2.10 The majority of the agricultural ditches were recorded as being usually dry and the ditches D2 and H26 were assessed as being of negligible suitability. Of the ditches recorded as being dry, otter footprints were recorded at H62 during the initial autumn habitat suitability assessment which indicates that otters may use this dry ditch occasionally as a commuting route which connects more suitable foraging habitats within their core home range.
- 3.2.11 A number of the ditches, and ditches associated with hedgerows, were assessed as providing suitable but poor habitat for otters including D7, D8, D9, H5, H17, H14, H21, H22, H30, H31, H33, H34, H57, H59, H71. Of these, a spraint was recorded at D8.
- 3.2.12 Ditches assessed as being of 'good' suitability for otter were recorded at H44 and H45 and the River Till, which bisects the Site, provided habitat of optimal suitability. A spraint was recorded along the River Till and cavities suitable as resting places for otter were recorded along the ditch associated with H45.

### *Cottam 1 West*

- 3.2.13 The results of the otter survey for Cottam 1 West are presented in Figure 4 below.
- 3.2.14 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for otter and the Site was bisected by the River Till. The River Till was assessed as providing optimal habitat for otter but presence was not confirmed by any field signs during the survey. The majority of the agricultural ditches were recorded as being usually dry and the ditches D5, H9, H21 and H36 were assessed as being of negligible suitability.
- 3.2.15 Ditches including D2, D6, D7, D8, H6, H7, H28, H29 were assessed as providing suitable but poor habitat for otters. The River Till, was assessed as providing optimal suitability for otter. No field signs of otter were recorded within the Site.

### Cottam 2

- 3.2.16 The results of the otter survey for Cottam 2 are presented in Figure 5 below.
- 3.2.17 This Site contained a number of agricultural drainage ditches of good interconnectedness within the interior of the Site with the more significant ditches of Corringham and Yarthorpe Becks forming much of the



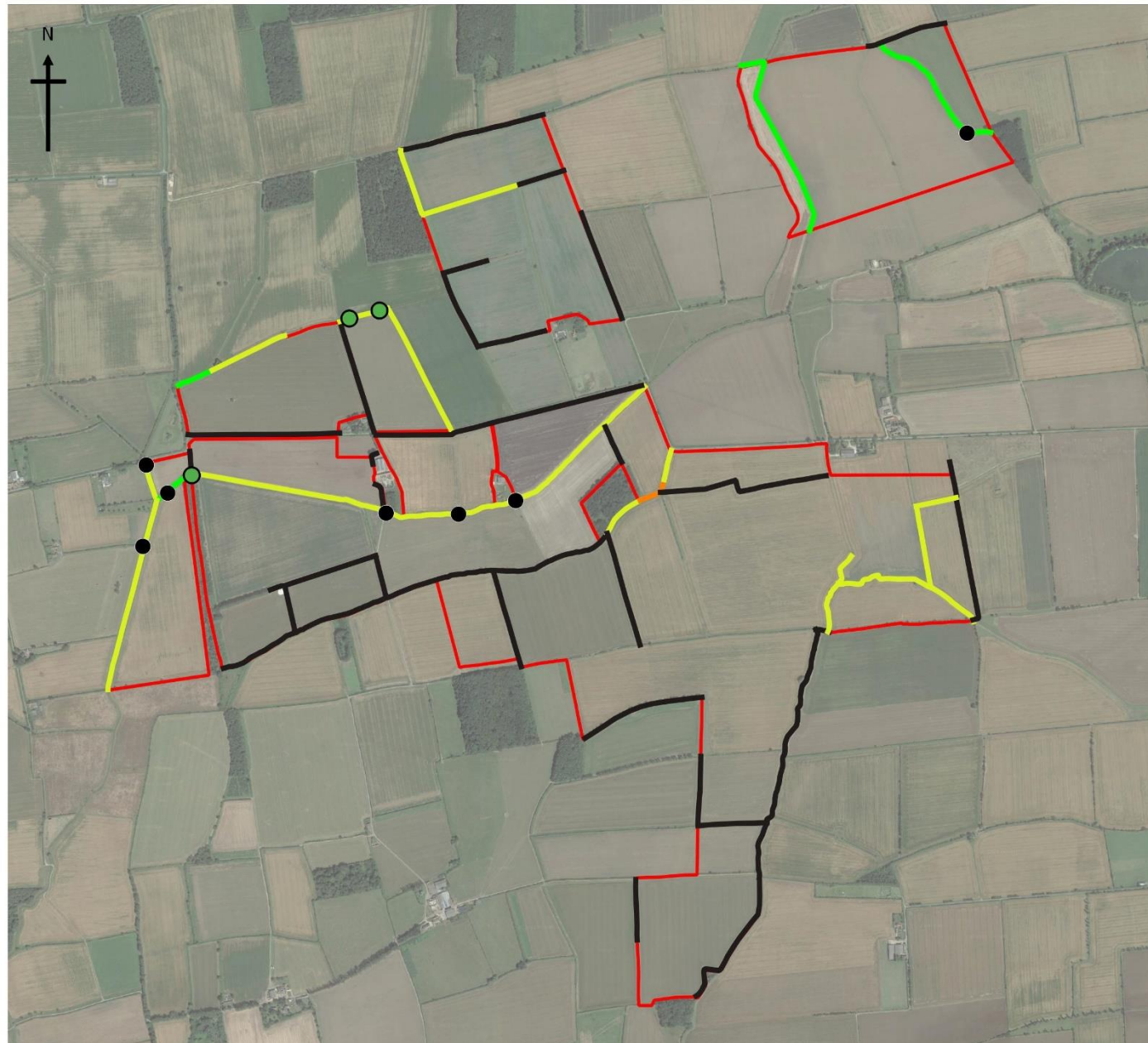
boundary of the Site. These ditches join at the northern end of the Site to form the start of River Eau. The majority of the internal ditches were recorded as being usually dry and the ditches D2, D4, D5, D6, D10, H8, H23, H24, H29, were assessed as being of negligible suitability. One internal ditch (D8) and several ditches forming the boundary of the Site were assessed as providing suitable but poor habitat for otters including the upper sections of the Corringham and Yarthorpe Becks (H18, D3, D9). The remaining sections of the Corringham Beck (D7, H9, H10) and Yarthorpe Beck (D1, H5, H6) and the short section of the River Eau (H1) that form the boundary of the Site were assessed as providing good habitat for otter. An otter spraint was recorded along Yarthorpe Beck (H5).

#### Cottam 3a

- 3.2.18 The results of the otter survey for Cottam 3a are presented in Figure 6 below.
- 3.2.19 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for otter and the Site was bordered on its eastern boundary by a tributary of the Northorpe Beck. The majority of the internal ditches were recorded as being either usually dry or of negligible suitability (D4, D6, H12, H13, H14, H17, H35). The remaining ditches within the Site were assessed as providing suitable but poor habitat for otters including D3, D7, D11, D12, D28, H2, H3, H6, H16, B26, B39). None of the ditches were assessed as providing good habitat. A single cavity with potential for shelter was recorded along H3.

#### Cottam 3b

- 3.2.20 The results of the otter survey for Cottam 3b are presented in Figure X below.
- 3.2.21 The agricultural drainage ditches within the Site were all assessed as being usually dry or of negligible suitability for otter. No field signs of otter were recorded within the Site.



**Key:**

- Survey area
- Suitability of ditches for otter**
- Optimal
- Good
- Suitable but poor
- Negligible
- Usually dry
- Observed signs of otter**
- Couch
- Footprints
- Cavity suitable for shelter
- Spraint



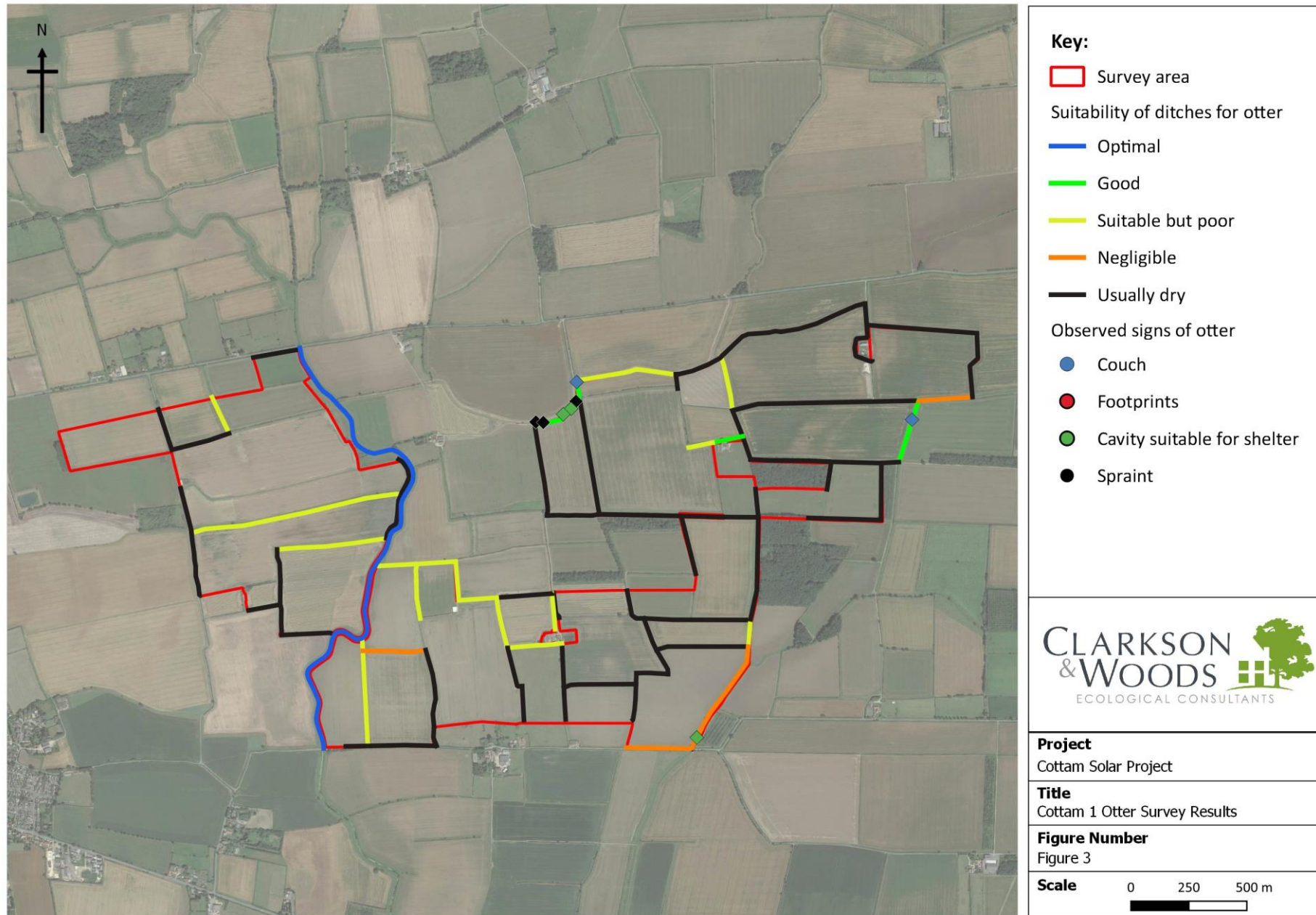
**Project**  
Cottam Solar Project

**Title**  
Cottam 1 North Otter Survey Results

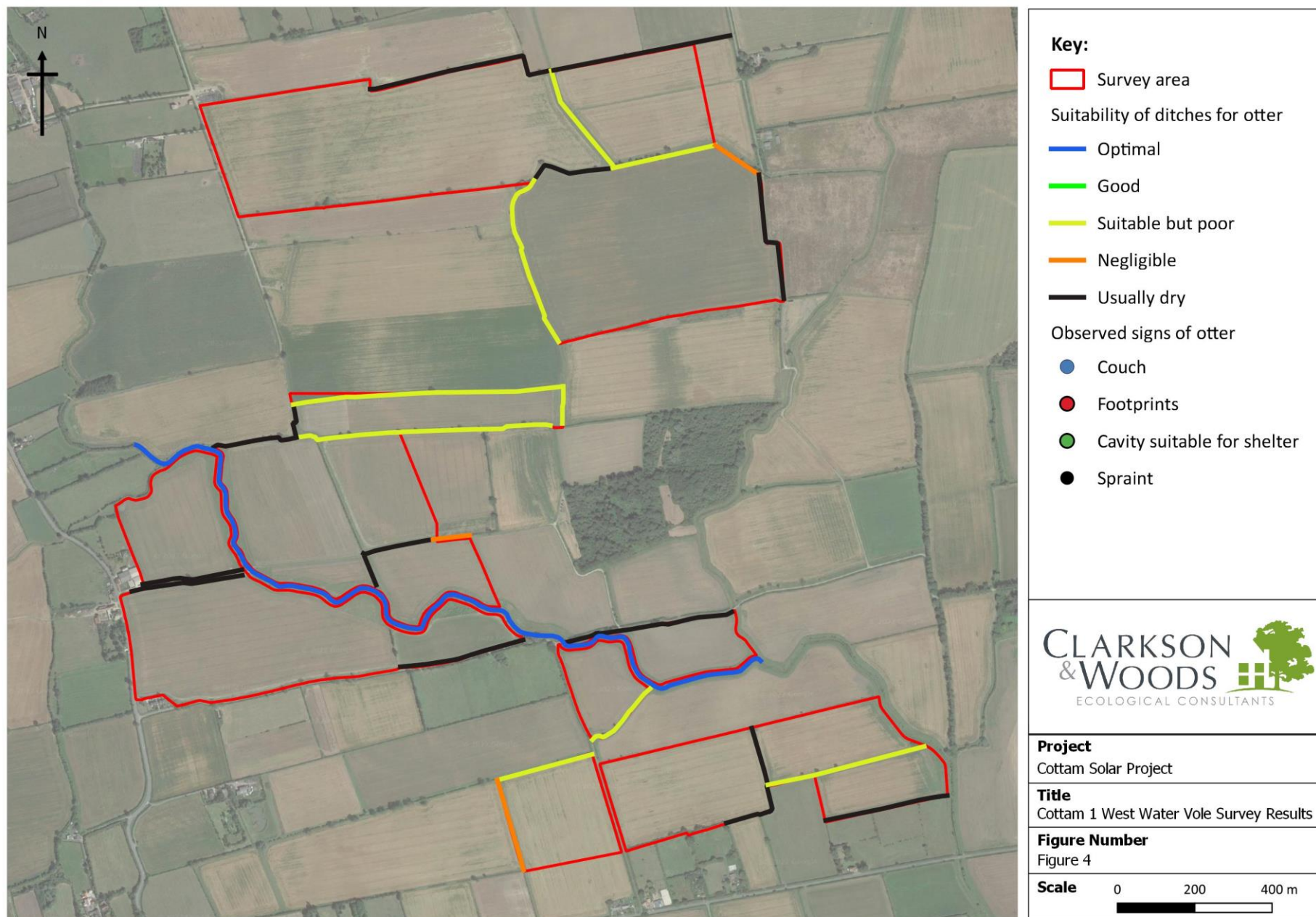
**Figure Number**  
Figure 2

**Scale** 0 250 500 m











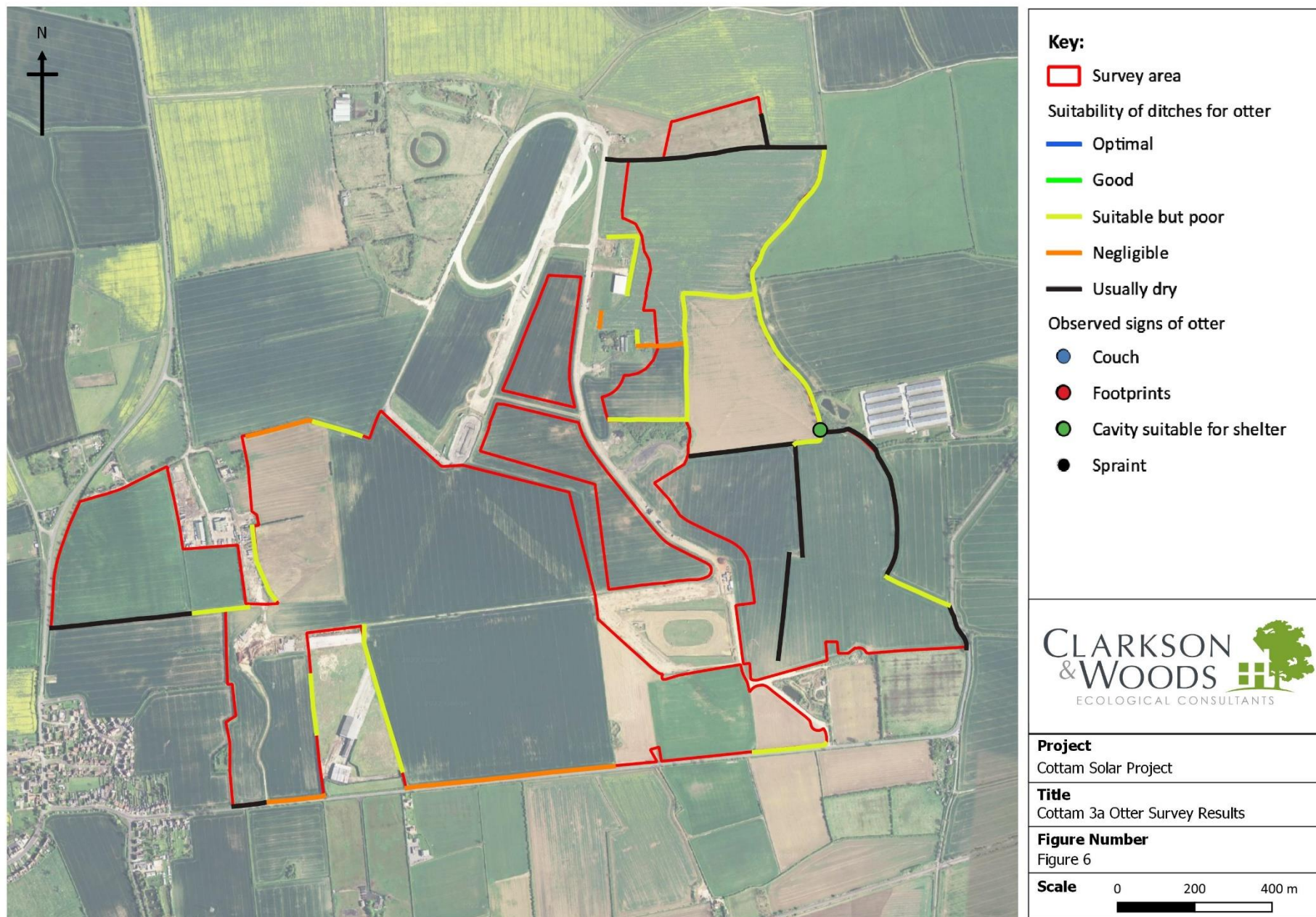
**Key:**

- Survey area
- Suitability of ditches for otter**
- Optimal
- Good
- Suitable but poor
- Negligible
- Usually dry
- Observed signs of otter**
- Couch
- Footprints
- Cavity suitable for shelter
- Spraint

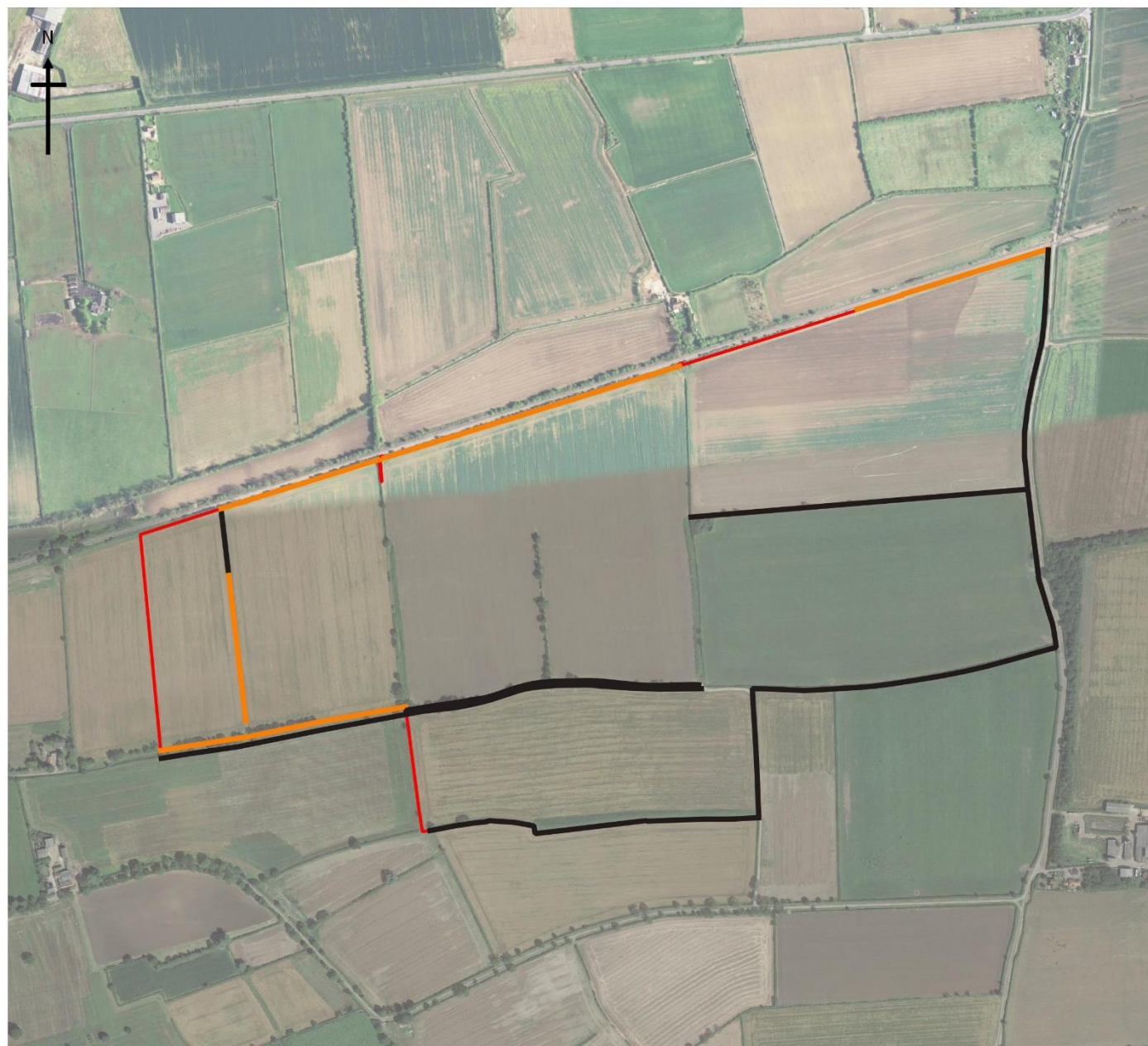


<b>Project</b>	Cottam Solar Project
<b>Title</b>	Cottam 2 Otter Survey Results
<b>Figure Number</b>	Figure 5
<b>Scale</b>	<div style="display: flex; align-items: center;"> <span style="margin-right: 20px;">0</span> <span style="margin-right: 20px;">200</span> <span>400 m</span> </div>









**Key:**

- Survey area
- Suitability of ditches for otter**
- Optimal
- Good
- Suitable but poor
- Negligible
- Usually dry
- Observed signs of otter**
- Couch
- Footprints
- Cavity suitable for shelter
- Spraint



**Project**

Cottam Solar Project

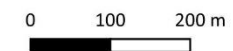
**Title**

Cottam 3b Otter Survey Results

**Figure Number**

Figure 7

**Scale**





## Water Voles

3.2.22 Watercourses and ditch reference numbers that are referred to in the text below are provided in Appendix B. Results are depicted on Figures 8-13 overleaf. Where no ditch habitat classification is shown, no ditch was present at that location. Table 2, below, shows the breakdown of the ditch network within the Survey Area which were observed as being suitable to water voles as well as the presence of observed field signs. This information is discussed in more detail in subsequent paragraphs.

**Table 2. Water Vole Field Survey Results Breakdown**

Site	Total Length of Ditch Network (m)	%age of Ditch Network 'Suitable but Poor' or Better	%age of Ditch Network Containing Water Vole Field Signs
Cottam 1 – North	33,748	23.6	5.43
Cottam 1 - South	33,339	22.2	1.8
Cottam 1 – West	20,693	26.9	2.0
Cottam 2	11,736	40.7	10.1
Cottam 3a	18,349	20.2	0
Cottam 3b	8,074	0	0

### Cottam 1

3.2.23 **Cottam 1** bordered the River Till and several substantial tributaries across Coates West, South and North with agricultural drainage ditches present along many of the field boundaries within the Site. The River Till was not surveyed for water vole field signs as presence was assumed and the data search returned records of this species along the river.

#### *Cottam 1 North*

3.2.24 The results of the water vole survey for Cottam 1 North are presented in Figure X below.

3.2.25 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for water vole several of which were more substantial ditches that are tributaries of the River Till.

3.2.26 The majority were assessed as being unsuitable for water vole as they were likely to be usually dry. A number of ditches and ditches associated with hedgerows were assessed as providing suitable but poor habitat for water vole including D1, D3, D5, D7, D11, D13, D16, D20, D21, D22, H2, H36, H37. Of these, four likely water vole burrows and one pile of feeding remains was recorded along D1, one burrow and two piles of feeding remains were recorded along D3 and one pile of feeding remains was recorded at the junction between D11 and D13.

3.2.27 Ditches assessed as being of 'good' suitability for water vole were recorded at D4, D6, D10, D17, D23, D24. Numerous potential water vole burrows were recorded along D4, D6 and D10 with several piles of feeding remains recorded at the eastern end of D10. Feeding remains were also recorded along D23 and D24.

#### *Cottam 1 South*

3.2.28 The results of the water vole survey for Cottam 1 South are presented in Figure X below.

3.2.29 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for water vole and the Site was bisected by the River Till which was a significant river providing optimal habitat for water vole.

3.2.30 The majority of ditches were assessed as being unsuitable for water vole as they were seen to be usually dry.

3.2.31 Several ditches were assessed as providing negligible suitability for water vole including H26, H44, H45, H71. Of these, feeding remains were recorded along H45. A number of ditches and ditches associated with





hedgerows were assessed as providing suitable but poor habitat for water vole including D2, D8, H5, H14, H17, H21, H22, H23, H30, H31, H33, H34, H59.

- 3.2.32 Ditches assessed as being of 'good' suitability for water vole were recorded at D7, D9, H57 and the section of the River Till that bisects the Site. Of these, latrines, feeding remains, footprints and burrows were recorded along D7 and a burrow was recorded along D9.

#### *Cottam 1 West*

- 3.2.33 The results of the water vole survey for Cottam 1 West are presented in Figure X below.
- 3.2.34 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for water vole and the Site was bisected by the River Till which was a significant river providing optimal habitat for water vole.
- 3.2.35 The majority of ditches were assessed as being unsuitable for water vole or were recorded as being usually dry. Several ditches were assessed as providing negligible suitability for water vole including H7, H21, H29.
- 3.2.36 A number of ditches and ditches associated with hedgerows were assessed as providing suitable but poor habitat for water vole including D2, H6, D5, D6, D7, D8, H9, H28, H36. No field signs for water vole were recorded within the Site, however as previously stated, the River Till was not surveyed for water vole field signs.

#### Cottam 2

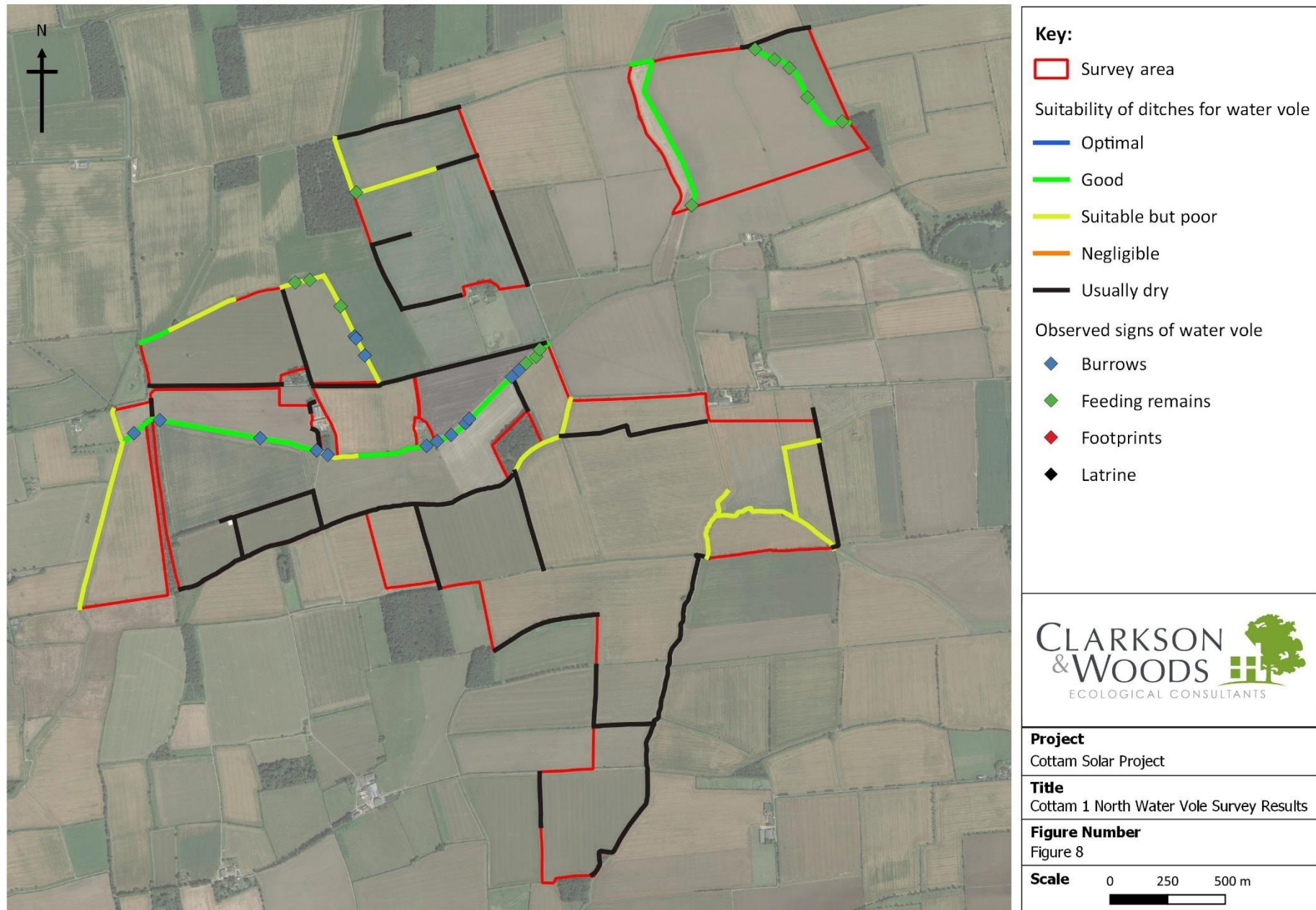
- 3.2.37 The results of the water vole survey for Cottam 2 are presented in Figure X below.
- 3.2.38 This Site contained a number of agricultural drainage ditches of good interconnectedness within the interior of the Site with the more significant ditches of Corringham and Yarthorpe Becks forming much of the boundary of the Site. These ditches join at the northern end of the Site to form the start of River Eau. The majority of the internal ditches were recorded as being usually dry and the ditches D2, D4, H24, were assessed as being of negligible suitability for water vole. Several ditches were assessed as providing suitable but poor habitat for water vole including D6, D8, D10H8, H23, H18. The Corringham Beck (D7, D9, H9, H10) and Yarthorpe Beck (D1, D3, H5, H6, H29) and the short section of the River Eau (H1) that form much of the boundary of the Site, along with the internal ditch D5, were assessed as providing good habitat for water vole. Three piles of feeding remains and a potential water vole burrow was recorded along Corringham Beck and one potential burrow was recorded along Yarthorpe Beck.

#### Cottam 3a

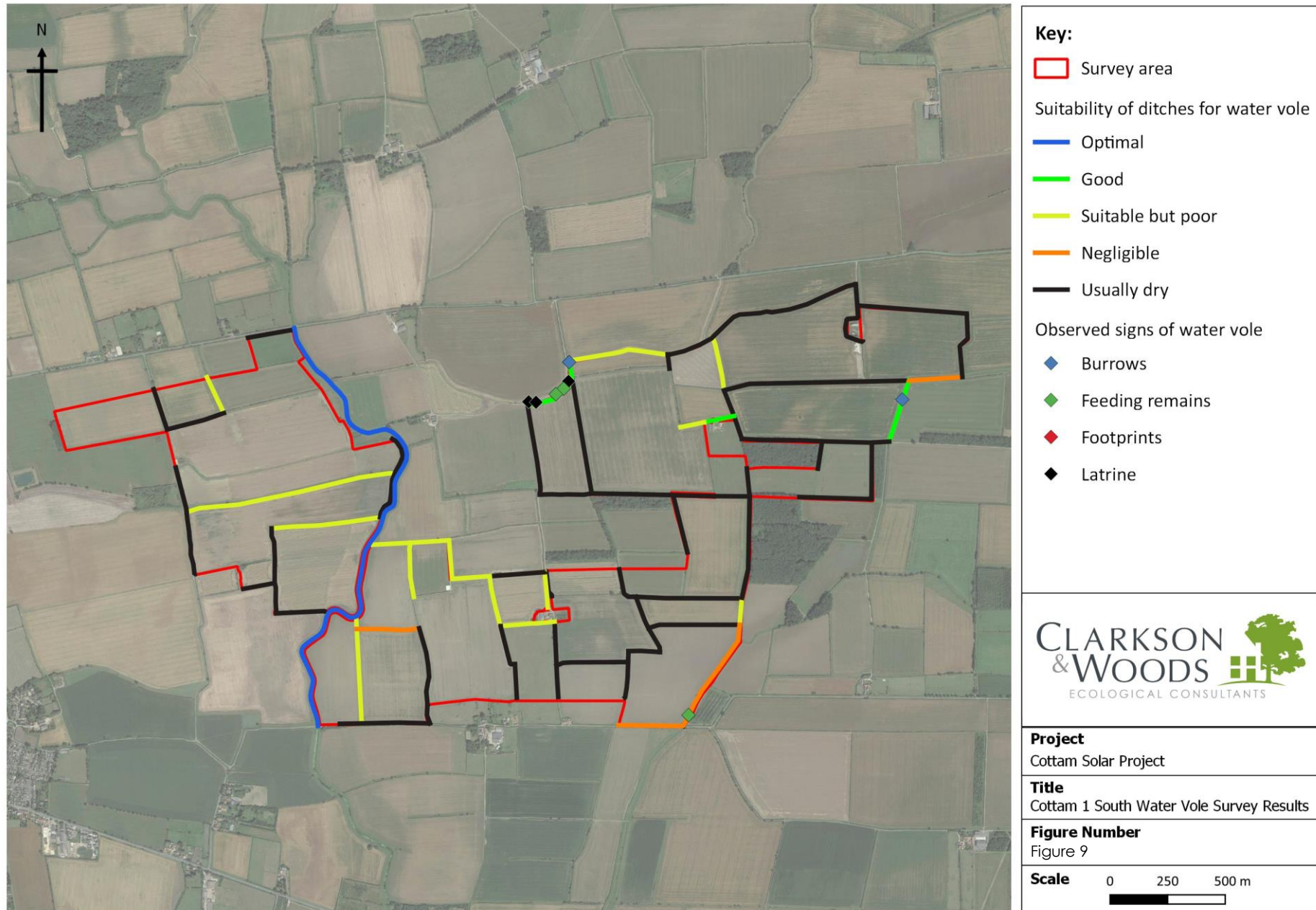
- 3.2.39 The results of the water vole survey for Cottam 3a are presented in Figure X below.
- 3.2.40 The drainage network within the Site comprised agricultural ditches at field boundaries of varying suitability for water vole and the Site was bordered on its eastern boundary by a tributary of the Northorpe Beck.
- 3.2.41 The majority of the internal ditches were recorded as being either usually dry or of negligible suitability (D4, H13, H14). A number of ditches and ditches associated with hedgerows were assessed as providing suitable but poor habitat for water vole including D3, D5, D6, D11, D12, D28, D32, H2, H3, H6, H11, H16, H17, H35, B26, B39). Ditches assessed as being of 'good' suitability for water vole were recorded at D23 and D7. No field signs of water vole were recorded within the Site during the surveys.

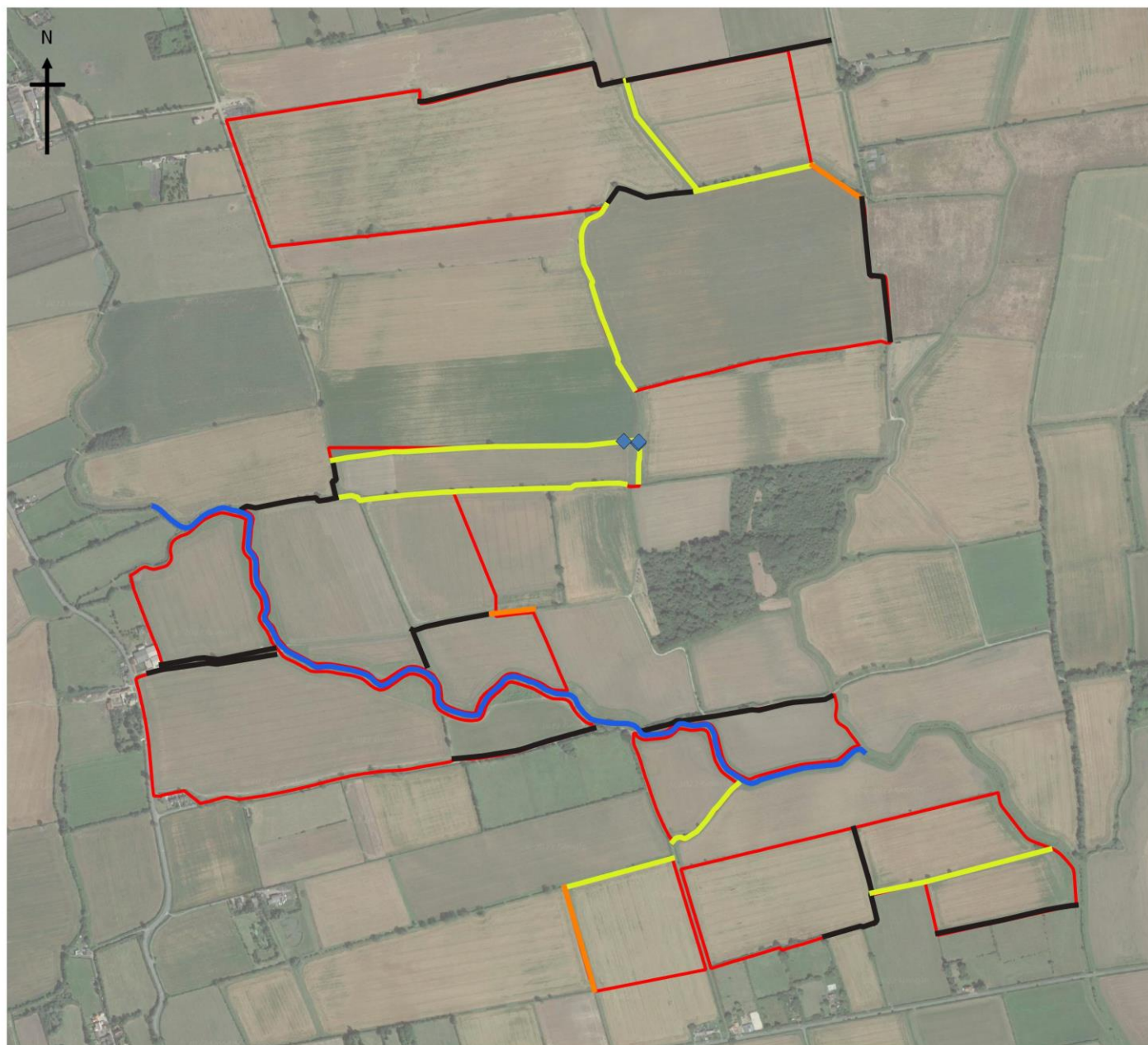
#### Cottam 3b

- 3.2.42 The results of the water vole survey for Cottam 3b are presented in Figure X below.
- 3.2.43 The agricultural drainage ditches within the Site were all assessed as being unsuitable, usually dry or of negligible suitability for water vole. No water vole field signs were recorded within the Site.









**Key:**

Survey area

Suitability of ditches for water vole

Optimal

Good

Suitable but poor

Negligible

Usually dry

Observed signs of water vole

Burrows

Feeding remains

Footprints

Latrine



**Project**

Cottam Solar Project

**Title**

Cottam 1 West Water Vole Survey Results

**Figure Number**

Figure 10

**Scale**

0 200 400 m







**Key:**

Survey area

Suitability of ditches for water vole

Optimal

Good

Suitable but poor

Negligible

Usually dry

Observed signs of water vole

Burrows

Feeding remains

Footprints

Latrine



**Project**

Cottam Solar Project

**Title**

Cottam 2 Water Vole Survey Results

**Figure Number**

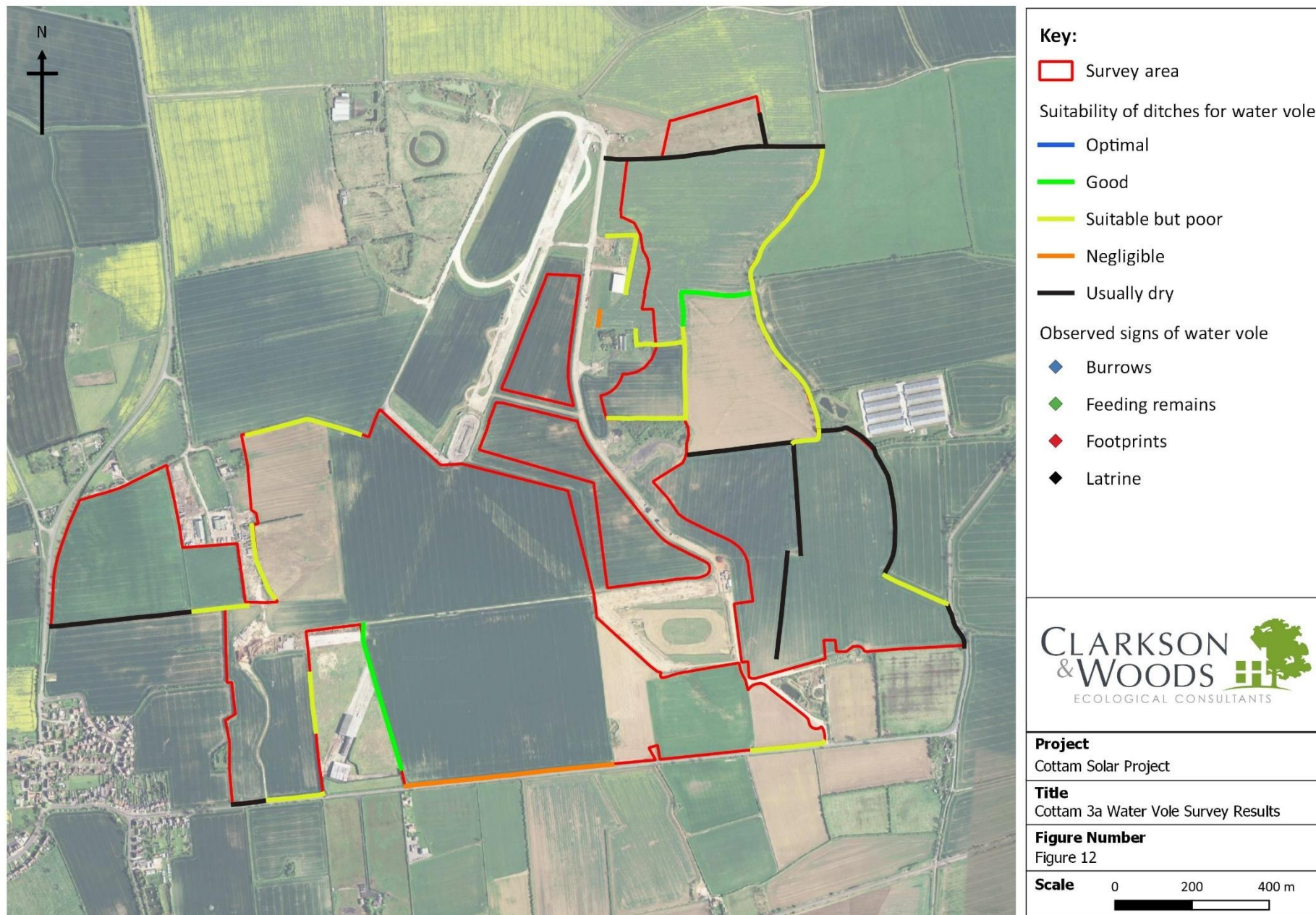
Figure 11

**Scale**

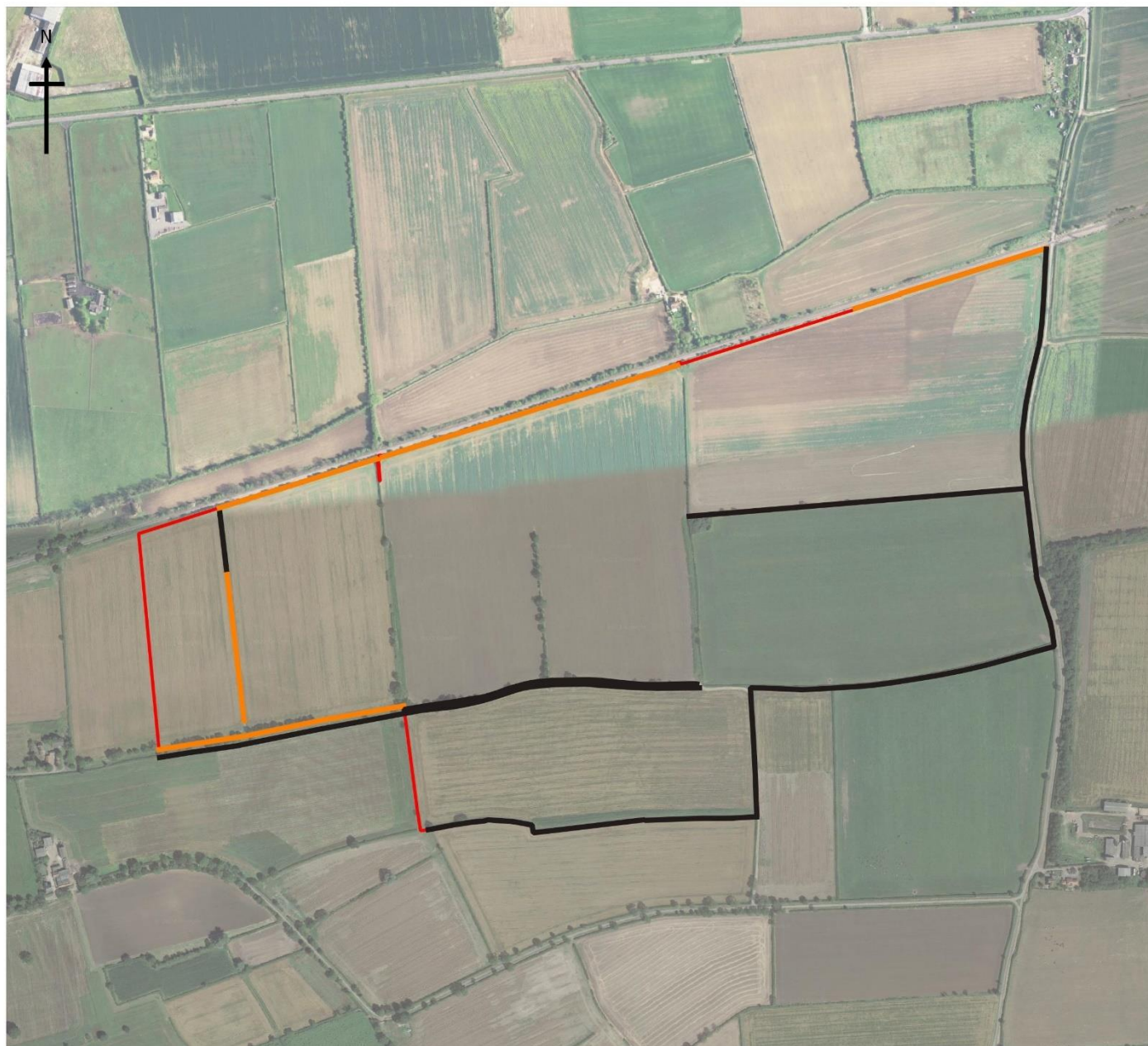
0 200 400 m











**Key:**

Survey area

Suitability of ditches for water vole

Optimal

Good

Suitable but poor

Negligible

Usually dry

Observed signs of water vole

Burrows

Feeding remains

Footprints

Latrine



**Project**

Cottam Solar Project

**Title**

Cottam 3b Water Vole Survey Results

**Figure Number**

Figure 13

**Scale**

0 100 200 m





## 4 ECOLOGICAL EVALUATION

- 4.1.1 This section provides an analysis of the value of ecological receptors identified as occurring within or in proximity of the Survey Area.
- 4.1.2 Otters and water voles are Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act 2006. Otters receive their principal legal protection under the 'Habitats Regulations', while water voles are fully protected under the Wildlife and Countryside Act, 1981, and appear on the Lincolnshire Biodiversity Action Plan.
- 4.1.3 Suitable habitat for otter and water vole within the Survey Area was restricted to river corridors, wet ditches and streams present on or adjacent to the Sites. Field signs for otter and water vole were recorded along the River Till and several wet agricultural drainage ditches within the Sites.
- 4.1.4 Considering the presence of otter principally within the larger watercourses at the Sites and relatively limited riparian corridors within the red line boundaries, being dominated by a network of mostly dry ditches, otter are consider to be of **Local importance** in the context of the Survey Area (see Table 1, below).
- 4.1.5 Considering the comparatively higher habitat suitability for water voles, their presence on the Lincolnshire BAP and moderately widespread presence of field signs, water voles are value as being of **District Importance** within the context of the Survey Area (see Table 1, below).

**Table 1: Ecological Evaluation**

Species	UK status	County status <sup>8</sup>	Level of activity on site	Ecological Importance
Otters	Scarce and widespread. GB population 11,000 GB IUCN: Least concern. The population has continually increased over the last 25 years and their range is expanding in England following significant declines in population and range in 20 <sup>th</sup> century.	Otters are present in Lincolnshire and are found on all catchments in the county (except possibly the Ancholme) – including the Rivers Bain, Upper Witham, Welland, Steeping/Lymn, Grantham Canal, Great Eau and Trent Valley. Recent surveys and records suggest that the population in the county is increasing.	Recorded present within River Till and several of the larger drainage ditches within Cottam 1 and Cottam 2. May use less suitable ditches within the Survey Area on occasion for commuting and dispersal.	Local
Water voles	GB population of 132,000. Water voles were formerly widespread and common in England, Wales and Scotland, ranging from Cornwall to the extreme north-east of Scotland. They are still widespread but patchy and have undergone one of the most serious declines of any mammal in Britain. This long-term decline has continued in the last 10 years. Water voles are vulnerable to extinction in Great Britain, being Endangered in England and Critically endangered in Wales. In Scotland, their status is Near threatened.	The Lincolnshire population is significant to the persistence of the water vole nationally because in Lincolnshire, despite the national trend, they are widespread and the population is one of the most successful in the UK. Recent work on distribution and densities in England has identified two Regional Key Areas in Lincolnshire; one in the Lincolnshire Coastal Grazing Marshes and the other in the Welland and Deeping area.	Assumed presence along River Till and recorded present within a number of more suitable drainage ditches within Cottam 1 and 2. Suitable ditches also recorded within Cottam 3a but no field signs recorded and no suitable habitat recorded within Cottam 3b.	District

<sup>8</sup> Based on information provided by the Lincolnshire Biodiversity Action Plan (2011) <https://www.nelincs.gov.uk/wp-content/uploads/2016/02/201110-LincolnshireBAP-3rd-edition.pdf>





## **4.2 Potential Sources of Impact**

- 4.2.1 Otters and water voles may be impacted through direct harm (to animals or their burrows) or disturbance during any construction activity affecting ditches, watercourses and associated adjacent scrub, hedgerows or woodland habitat.
- 4.2.2 Barriers to movement in the form of severed or blocked/culverted watercourses and linear natural features may cause population fragmentation, however it is not known at this stage how many new ditch/watercourse crossings will be required and the design/form that they will take.
- 4.2.3 Construction activities and, potentially, routine operation and maintenance may cause disturbance to otters and water voles within sheltering locations and accidental harm to their habitat or burrows.
- 4.2.4 Riparian habitat quality is at risk of degradation through pollution resulting from run-off, sediment/dust deposition and contamination are possible during the construction phase.
- 4.2.5 Operational impacts are expected to be minimal as vehicle movements will be infrequent and limited, taking place by and large outside of the installed buffer zones. This will significantly limit the risk of disturbance, pollution and damage impacts.

## **4.3 Potential Mitigation, Compensation and Enhancement Options**

- 4.3.1 The design of the Scheme is such that buffer zones will be installed prior to the onset of the construction phase, limiting movements of construction vehicles, plant, personnel and material within at least 8m (and up to 30m) of every ditch and watercourse.
- 4.3.2 The detail of all protective measures to safeguard the suitability of habitats on Site for otters and water voles would be set out in a Construction Environmental Management Plan (CEMP), or similar. Such protection or mitigation could include pre-construction update surveys, seasonal timing, employment of Horizontal Directional Drilling, an Ecological Clerk of Works and the coverage of a licence from Natural England to permit certain unavoidable works which would directly affect water voles or their burrows.
- 4.3.3 A Landscape and Ecological Management Plan (LEMP) or similar, would secure the favourable management of the Scheme's buffer zones for the duration of the consent, thereby maintaining and potentially enhancing the habitat quality of ditches and watercourses.
- 4.3.4 The opportunity to enhance existing watercourses where otters and/or water voles have been recorded, or those connected to such features which have the potential to support these species, will be explored with advice from local conservation organisations.



## APPENDIX A: WILDLIFE LEGISLATION & SPECIES INFORMATION

### OTTERS

Otters and their holts are protected in England and Wales under the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'. This makes it an offence to deliberately kill or injure an otter, or to deliberately disturb an otter such that its ability to breed or rear young, or such that the species' distribution, were significantly affected. It is also an offence to damage or destroy any breeding site or resting place. Intentional or reckless disturbance of otters in their holts, and damage to or obstruction of holts are also offences under the Wildlife and Countryside Act 1981 (as amended). Penalties for offences against otters or their holts include fines of up to £5,000 and/or up to six months in prison.

Any development works which are likely to involve the loss of holts, or which could result in killing of or injury to otters (which are only likely to occur extremely rarely), need to take place under licence. Works which could disturb otters may also be licensable, though this is also rarely the case as the majority of developments on watercourses and coastal areas where otters are present can be carried out in a way which avoids significant disturbance.

Where it is necessary, licences can be obtained from Natural England or the Welsh Government to permit works that would otherwise be illegal, provided it can be demonstrated that the proposed works are needed to protect public health or safety, or for other reasons of overriding public interest including social and economic reasons. It is also necessary to demonstrate that there is no satisfactory alternative to the proposed works, and that the conservation status of otters in the area will be maintained. Appropriate mitigation and post-construction monitoring are therefore a requirement of all licences.

### WATER VOLES

Water voles *Arvicola amphibius* receive protection under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to: intentionally kill, injure, or take a water vole; intentionally or recklessly disturb a water vole whilst in its place of shelter; intentionally or recklessly damage, obstruct or destroy a water vole's place of shelter; or intentionally or recklessly obstruct access to a place of shelter. Penalties for offences against water voles include fines of up to £5,000 and/or up to six months in prison.

Works such as watercourse re-profiling, installing culverts, or topsoil stripping close to watercourses and ponds which could result in destruction or obstruction of burrows could be considered reckless, and/or could be considered intentional if water voles are killed or injured, unless measures are taken to minimise the risk of this occurring. Any inadvertent impacts on water voles despite these mitigation measures being in place would be considered an 'incidental result of an otherwise lawful operation' which 'could not reasonably have been avoided' and therefore not an offence.

In practice, mitigation for impacts of development on water voles generally comprise one or more of the following techniques: displacement, in which water voles are encouraged to move to suitable retained habitat by changing the management of areas affected by development; exclusion, where water vole-resistant fencing is provided between a development site and suitable retained habitat allowing animals to be trapped from the development footprint and released elsewhere on the site; and translocation, where animals are trapped from a development site and released on another suitable site nearby. Water vole mitigation proposals, particularly those involving translocation of animals, should be agreed in advance with Natural England or Natural Resources Wales.

### PLANNING POLICY IN RELATION TO BIODIVERSITY

The National Planning Policy Framework (NPPF), was published in March 2012 and revised in July 2021. Additional guidance can be found online at <http://planningguidance.planningportal.gov.uk/blog/guidance/>. The NPPF simplifies and collates a number of previous planning documents and outlines the government's objective towards biodiversity.

The NPPF identifies ways in which the planning system should contribute to and enhance the natural and local environment (Paragraph 174), including:

- (a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- (b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- (e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- (f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate. protecting and enhancing valued landscapes, geological conservation interests and soils;

It also emphasises the importance of conserving biodiversity and areas covered by landscape designations (Paragraph 176):



Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty. The conservation of wildlife and cultural heritage are important considerations in all these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

When determining planning applications, the NPPF states that local planning authorities should aim to conserve and enhance biodiversity (Paragraph 175) by applying principles including:

- (a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- (b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- (c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons<sup>6</sup> and a suitable compensation strategy exists; and
- (d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate..

The following should be given the same protection as habitats sites:

- (a) potential Special Protection Areas and possible Special Areas of Conservation;
- (b) listed or proposed Ramsar sites<sup>7</sup>; and
- (c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

There is a general presumption in favour of sustainable development within the NPPF. It is noted in Paragraph 182 that this presumption does not apply where the plan or project is likely to have a significant effect on a habitat site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

The Natural Environment and Rural Communities Act (2006) states that a public authority must, "in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity; Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat". DEFRA issued further guidance on implementation of this act in the document; Guidance for Local Authorities on Implementing the Biodiversity Duty (May 2007), which notes that "Conserving biodiversity includes restoring and enhancing species populations and habitats, as well as protecting them".

## ECOLOGICAL ENHANCEMENTS

The Natural Environment and Rural Communities Act (2006) states that a public authority must, "in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity; Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat". DEFRA issued further guidance on implementation of this act in the document; Guidance for Local Authorities on Implementing the Biodiversity Duty (May 2007), which notes that "Conserving biodiversity can include restoring or enhancing a population or habitat".

In England, the National Planning Policy Framework (NPPF), issued in July 2021, states that the planning system should contribute to "*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*;. It also states that "*opportunities to incorporate biodiversity in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity*".

## UK BIODIVERSITY ACTION PLANS

The UK Biodiversity Action Plan (UK BAP) 2011 is a policy first published in 1994 to protect biodiversity and stems from the 1992 Rio Biodiversity Earth Summit. The policy is continuously revised to combine new and existing conservation initiatives to conserve and enhance species and habitats, promote public awareness and contribute to international conservation efforts. Each plan details the status, threats and unique conservation strategies for the species or habitat concerned, to encourage spread and promote population numbers.

Species or habitats identified as priorities under the UK Biodiversity Action Plan receive some status in the planning process through their identification as Species/Habitats of Principal Importance in England and Wales, under the Natural Environment and Rural Communities (NERC) Act 2006 (as amended).





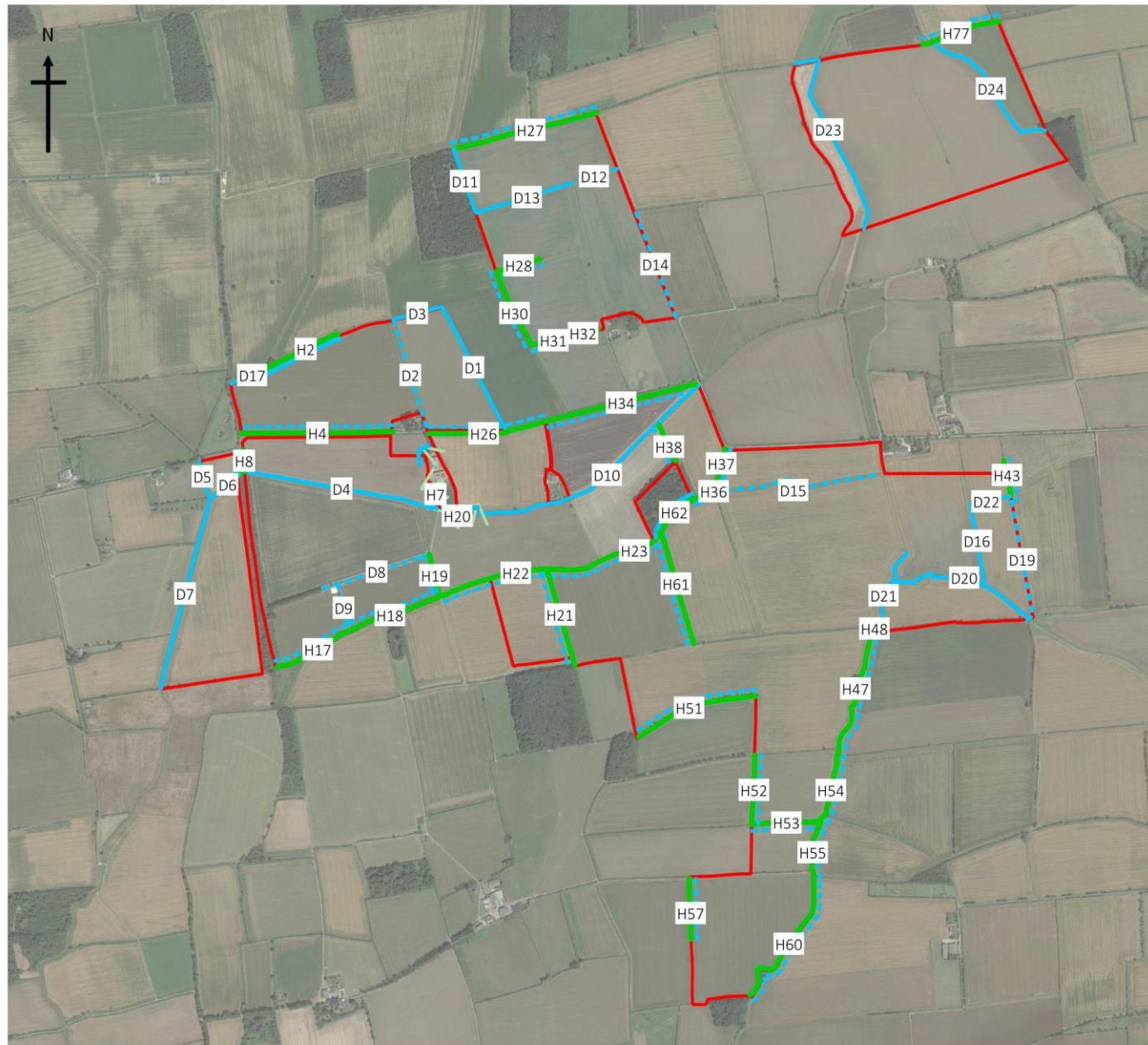
---

Current planning guidance in England, the National Planning Policy Framework, does not specifically refer to Species or Habitats of Principal Importance, though it includes guidance for conservation of biodiversity in general. Supplementary guidance is available online at <http://planningguidance.planningportal.gov.uk/blog/guidance/> and this guidance indicates that it is 'useful to consider' the potential effects of a development on the habitats or species on the Natural Environment and Rural Communities Act 2006 section 41 list.










---

## APPENDIX B: DITCH AND WATERCOURSE REFERENCE NUMBERS



**Key:**

-  Survey area
-  Dry ditch
-  Wet ditch or waterway
-  Hedgerow with dry ditch
-  Hedgerow with wet ditch
-  Treeline with dry ditch
-  Treeline with wet ditch



**Project**

Cottam Solar Project

**Title**

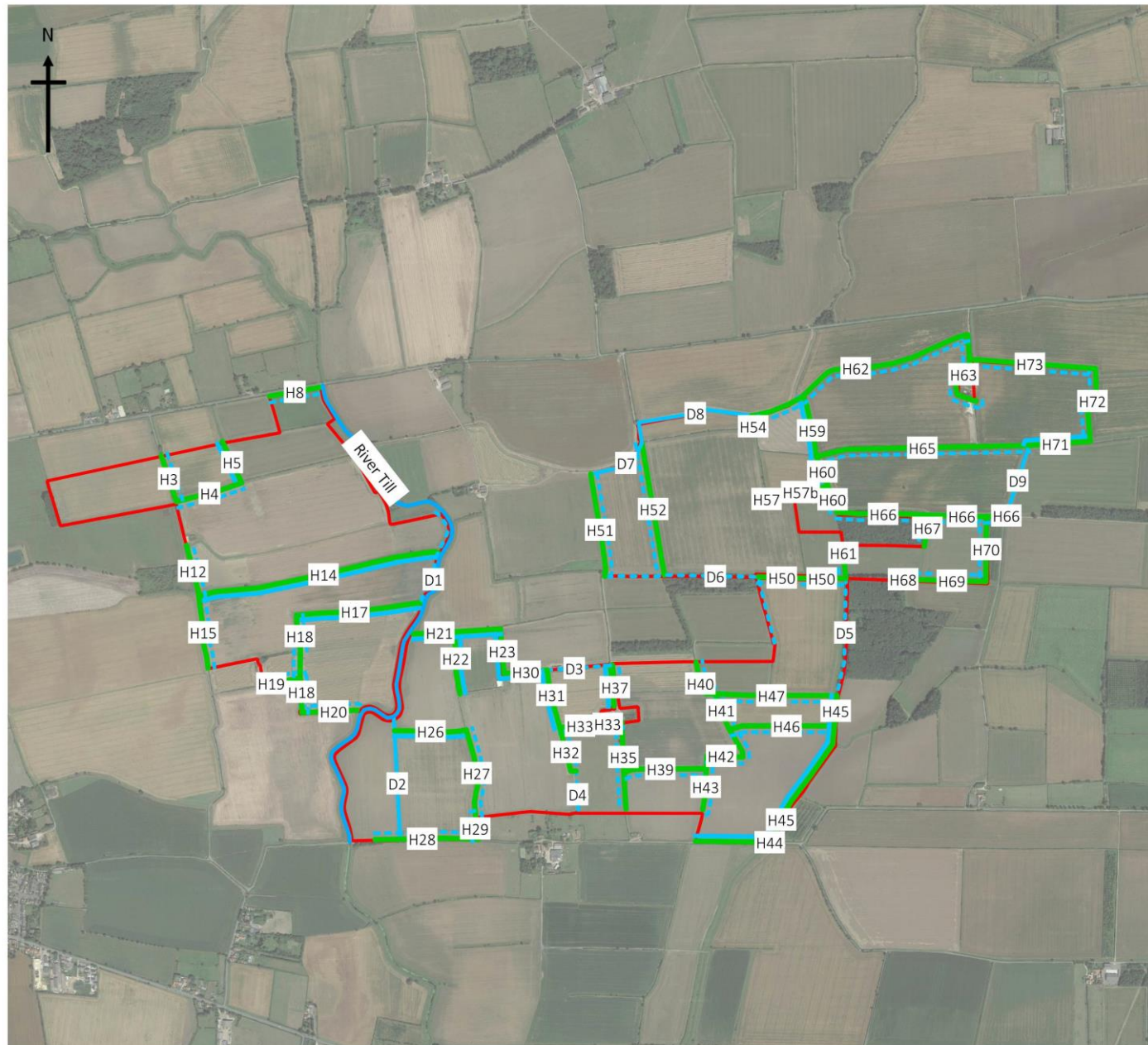
Cottam 1 North Ditches and Waterways

**Figure Number**








**Scale** 0 250 500 m







**Key:**

-  Survey area
-  Dry ditch
-  Wet ditch or waterway
-  Hedgerow with dry ditch
-  Hedgerow with wet ditch
-  Treeline with dry ditch
-  Treeline with wet ditch



**Project**

Cottam Solar Project

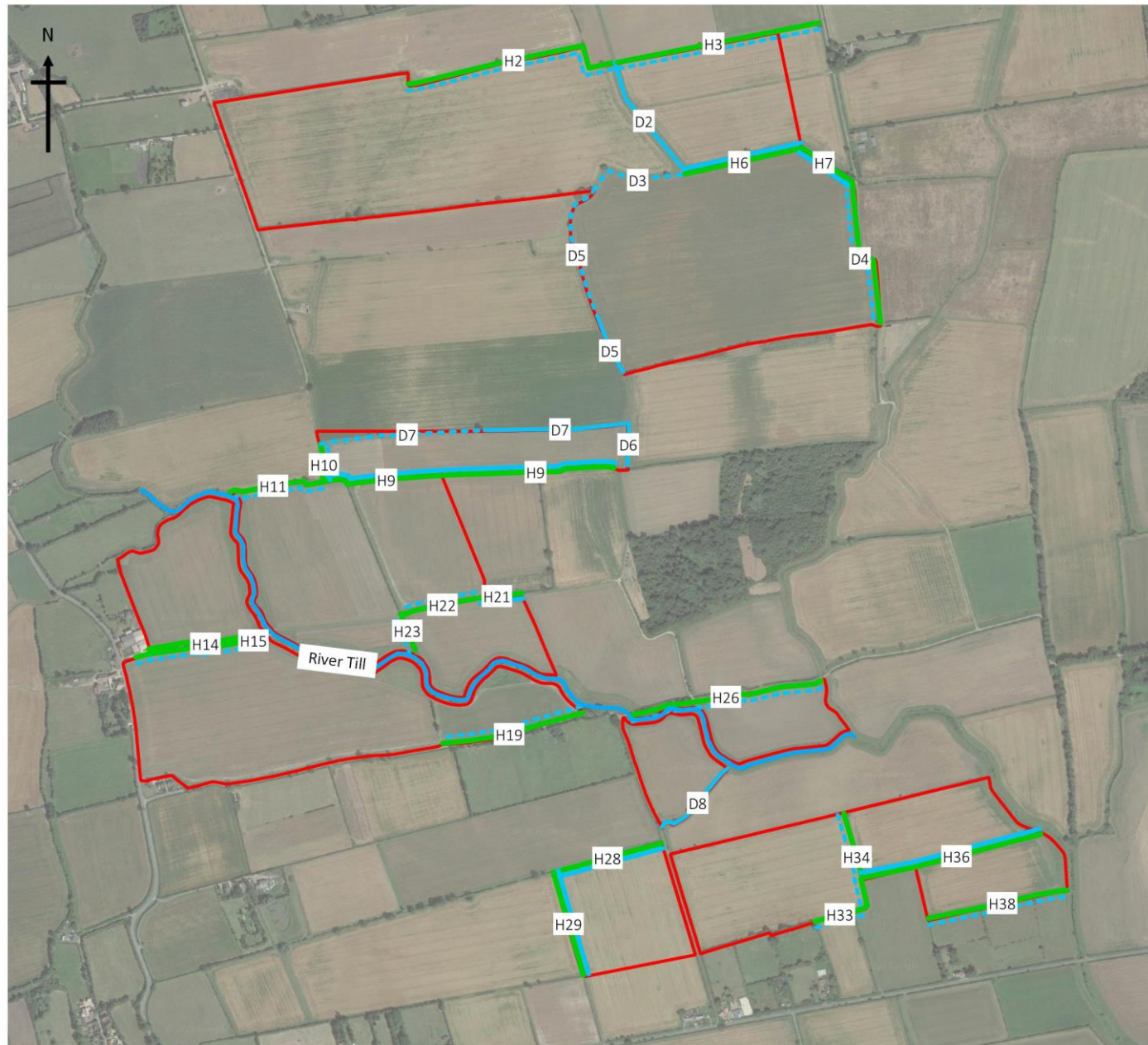
**Title**

Cottam 1 South Ditches and Waterways








**Figure Number**

**Scale** 0 250 500 m





**Key:**

-  Survey area
-  Dry ditch
-  Wet ditch or waterway
-  Hedgerow with dry ditch
-  Hedgerow with wet ditch
-  Treeline with dry ditch
-  Treeline with wet ditch



**Project**

Cottam Solar Project

**Title**

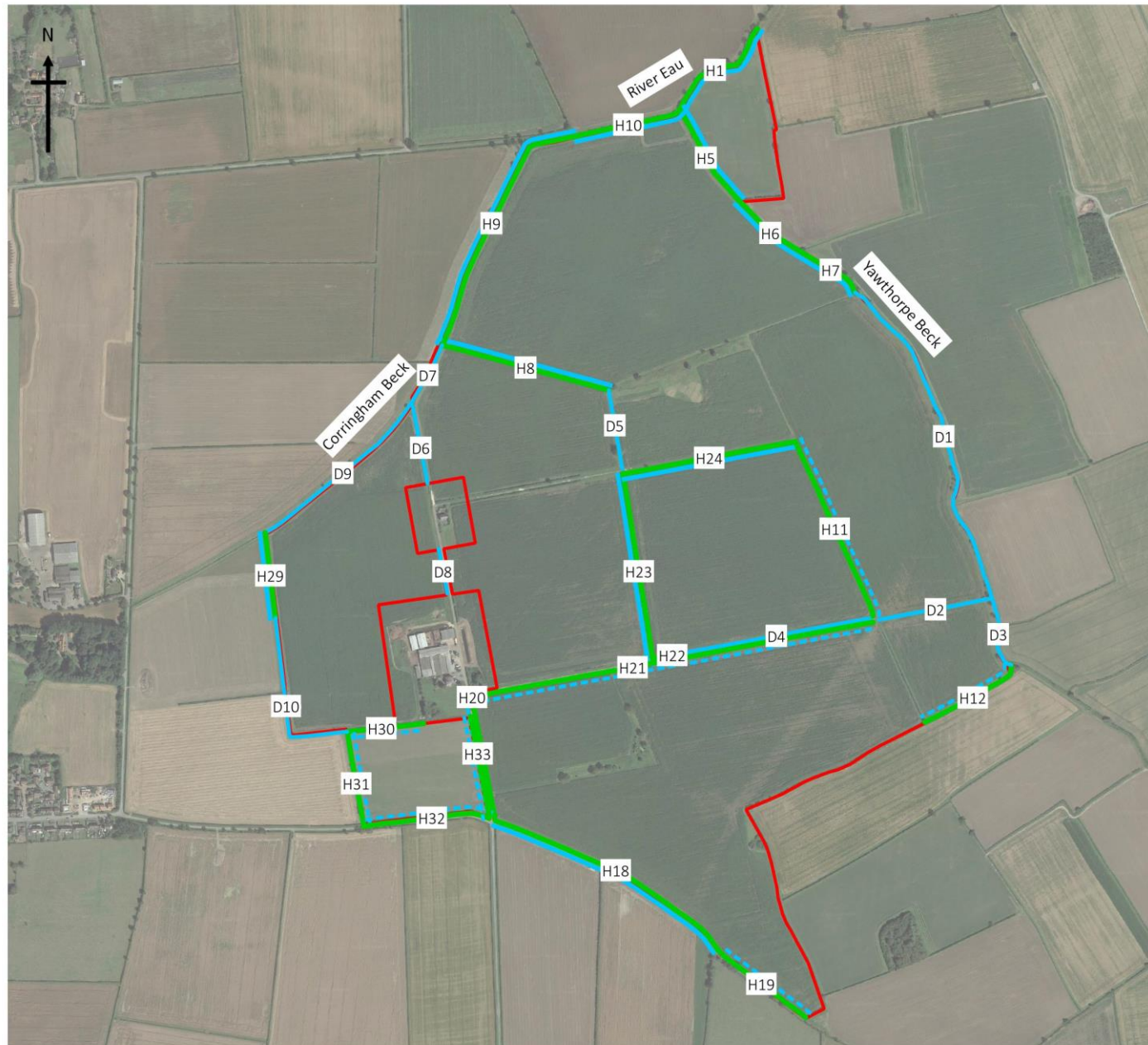
Cottam 1 West Ditches and Waterways

**Figure Number**








**Scale** 0 250 500 m







**Key:**

-  Survey area
-  Dry ditch
-  Wet ditch or waterway
-  Hedgerow with dry ditch
-  Hedgerow with wet ditch
-  Treeline with dry ditch
-  Treeline with wet ditch



**Project**

Cottam Solar Project

**Title**

Cottam 2 Ditches and Waterways

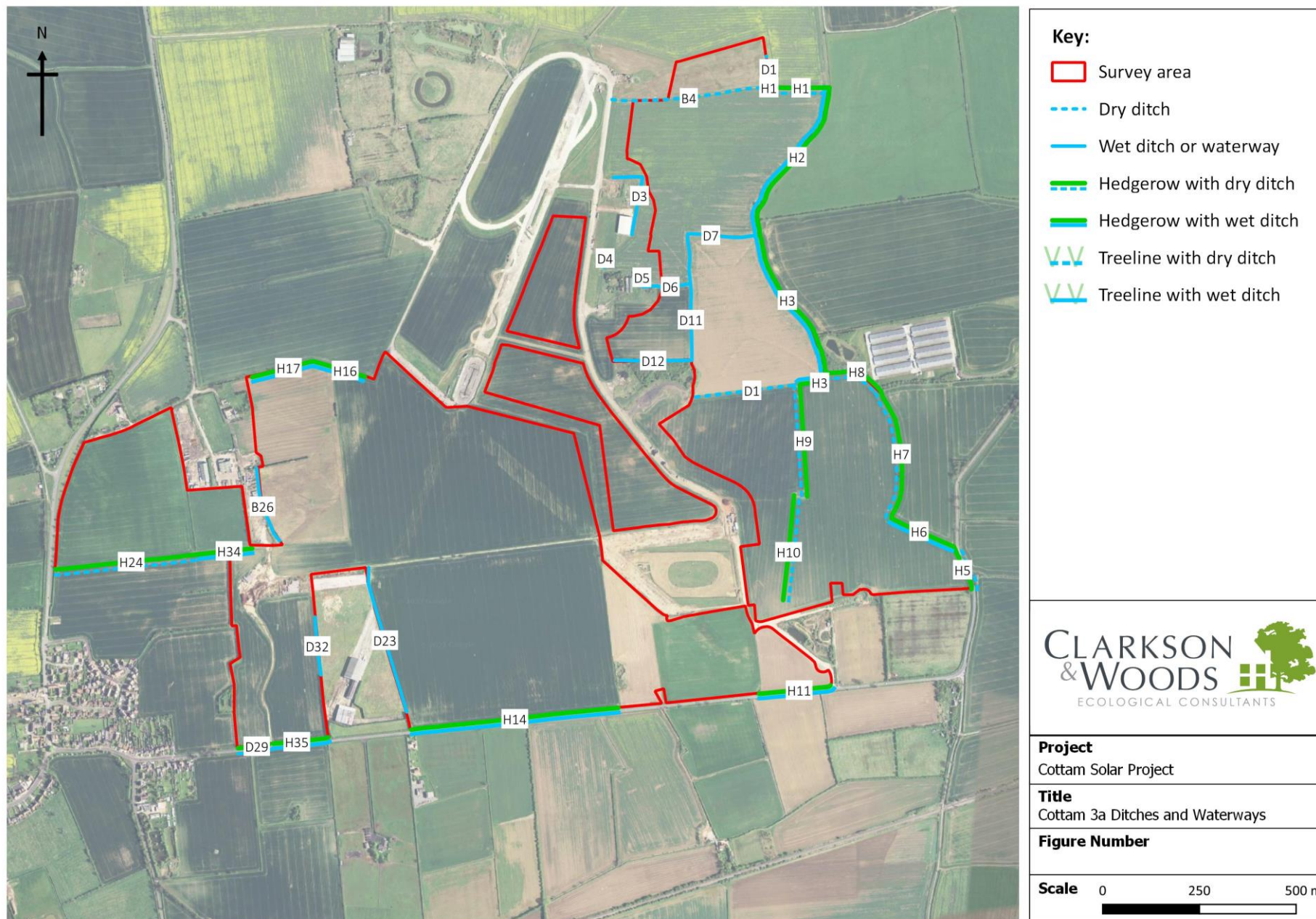
**Figure Number**

**Scale**

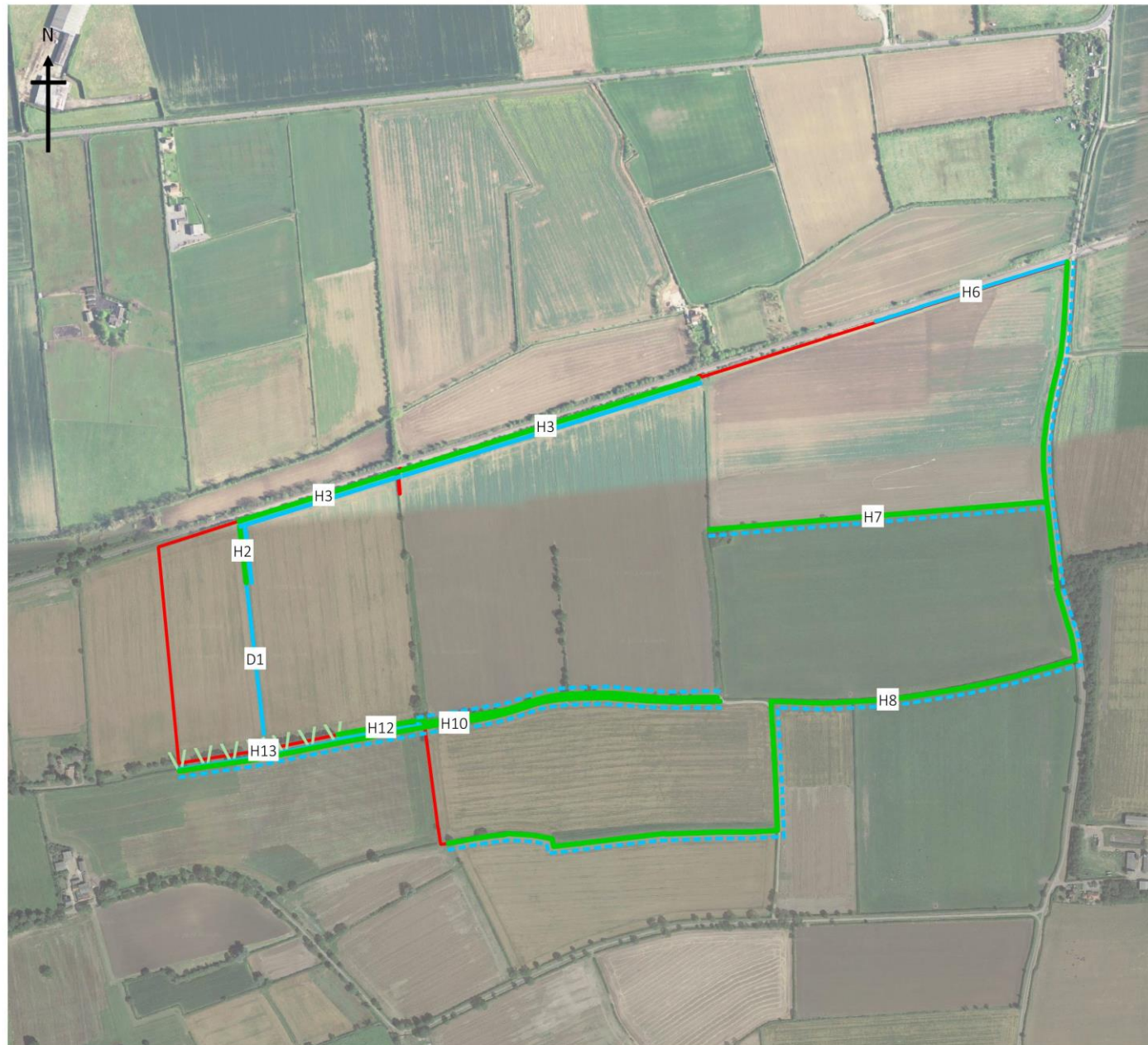
0 100 200 m


















**Key:**

-  Survey area
-  Dry ditch
-  Wet ditch or waterway
-  Hedgerow with dry ditch
-  Hedgerow with wet ditch
-  Treeline with dry ditch
-  Treeline with wet ditch



**Project**

Cottam Solar Project

**Title**

Cottam 3b Ditches and Waterways

**Figure Number**

**Scale** 0 100 200 m





**Clarkson and Woods Ltd.**

Overbrook Business Centre,  
Poolbridge Road, Blackford,  
Somerset BS28 4PA

t: 01934 712500

e: [info@clarksonwoods.co.uk](mailto:info@clarksonwoods.co.uk)

