

# **One Earth Solar Farm**

**Volume 6.0 Environmental Statement [EN010159]** 

**Volume 3: Technical Appendices Supporting ES Volume 2** 

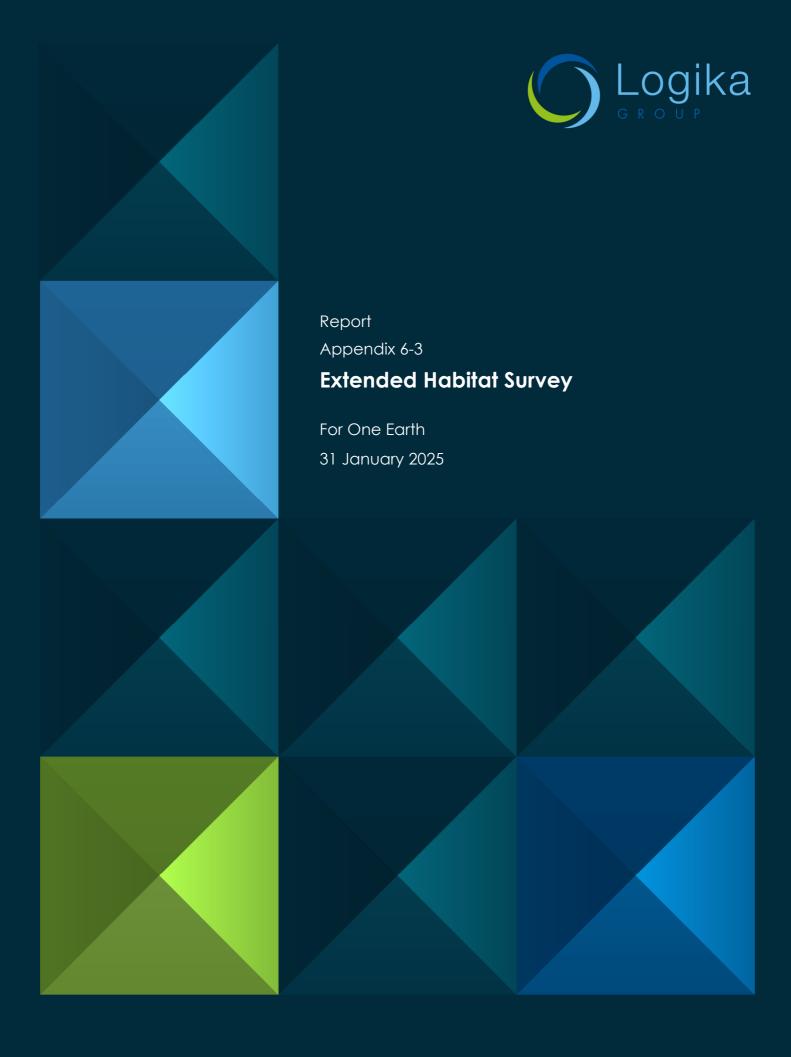
**Appendix 6.3: Extended Habitat Survey** 

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## **Contents**

Tabl	le 3-3: Protected species with the potential of occurring within the DCO Order Limits	13
Tal	bles	
4	References	15
3	Results	7
2	Methods	5
I	Introduction	4



## 1 Introduction

#### 1.1 Background

- 1.1.1 This Appendix should be read in conjunction with Chapter 6 of the Environmental Statement (ES) which is provided in support of the delivery of an Environmental Impact Assessment (EIA) associated with the One Earth Solar Farm, hereafter referred to as the 'Proposed Development'.
- 1.1.2 This Appendix describes the survey methods and results of the Extended Phase 1 habitat surveys undertaken in connection to the Development Consent Order (DCO) Limits ('Order Limits') between April 2023 and August 2024.

## 1.2 Purpose of this Appendix

- 1.2.1 The purpose of the Appendix is to present the results of the extended phase 1 habitat survey which has been undertaken within the Order Limits to identify and assess the baseline habitats that may be impacted by the Proposed Development.
- 1.2.2 To inform an assessment of potential likely significant effects of our Project upon biodiversity, an Extended Phase 1 habitat survey was scoped into the assessment to provide baseline information about the habitats within our Project area.
- 1.2.3 The Order Limits cross through habitats with the potential to support priority habitats, irreplaceable habitats and legally protected or controlled and otherwise notable vascular plant species, it is therefore necessary to assess these habitats and gather information as to their potential presence and baseline condition. Information gathered for protected, controlled or notable faunal species during the Extended Phase 1 habitat survey is presented within individual species appendices (Appendix 6-4 to 6-9).
- 1.2.4 This Appendix outlines the methodologies used and summarises the habitat results gathered as part of an Extended Phase 1 habitat survey within the Order Limits (as defined in **Chapter 5: Description of the Proposed Development**) hereafter referred to as the Study Area (shown on **Figure A-2, Annex A**).

#### 1.3 Structure of this Appendix

- 1.3.1 This Appendix is structured as follows:
  - Section 2: Methods
  - **Section 3:** Results
  - Section 4: References
  - Annex A: Figures



## 2 Methods

## 2.1 Phase 1 Habitat Survey

- 2.1.1 The Phase 1 habitat survey is an established field-scale vegetation survey method that classifies land parcels into various habitat categories. In line with the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat survey methodology (JNCC. 2010). A Phase 1 habitat survey was undertaken between April 2023 and August 2024 (full survey details are provided in **Annex A2**) of all accessible habitats within the Order Limits.
- 2.1.2 Distinct habitats were identified and any conservation-notable habitats or interest features that were beyond the minimal mappable unit<sup>1</sup> (too small to map) were subject to a more detailed description, presented in the results. Concurrently with the Phase 1 habitat survey, habitat type according to the UK Habitats Classification (UKHab, 2023) and habitat condition (Defra, 2024) were also recorded for use within the Biodiversity Net Gain Assessment (see Appendix 6.10 Biodiversity Net Gain Assessment)
- 2.1.3 As the standard Phase 1 habitat survey methodology is largely concerned with vegetation communities only, the survey was 'extended' to include:
  - Preliminary searches for evidence of protected or conservation-notable species species-groups (including dormice; bats; great crested newts; badger; water voles; reptiles; and otters), and for habitats or features likely to support them if direct evidence is absent.
  - Hedgerow assessments, aimed at identifying hedges that might be classified as 'important' based on the relevant ecological and structural criteria set out in The Hedgerows Regulations 1997.
  - The identification of other constraints (e.g. non-native invasive plant species) or opportunities (e.g. opportunities for micro-siting or works or biodiversity enhancements) that may be present at the site.
- 2.1.4 It should be noted that while every effort has been made to provide a comprehensive description of the Site, this survey did not constitute a full botanical survey.
- 2.1.5 The nomenclature for the vascular plants in this report follows Stace (2019) for both scientific and English names, see **Annex A3**.

## 2.2 Legally controlled species

2.2.1 The presence and location of any invasive non-native species (INNS) of plant legally controlled via Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), such as Japanese knotweed and Himalayan balsam, was recorded during the Phase 1 habitat surveys.

#### 2.3 Deviations, constraints and limitations

2.3.1 The habitat data was gathered over two successive years and is considered to be ecologically sound to inform habitat assessments. However, information pertaining to crop type, hedgerow height / width or arable field margins may be incorrect at the time of submission due to crop rotation and hedgerow management rotation as is typical within an arable environment.

14529A 5 of 63 31 January 2025

<sup>&</sup>lt;sup>1</sup> Minimal mappable unit for this project was 25 metres squared.



- 2.3.2 A total of 92.5 percent (1,304 ha) of the 1,409 ha Order Limits was subject to ground-based Phase 1 habitat survey, with the additional 7.5 percent remotely sensed using aerial imagery. Areas surveyed are shown in **Annex A1**, **Figure A-1**.
- 2.3.3 The habitats within the gated access of National Grid controlled High Marnham Substation were not subject to full survey due to a lack of available access, instead these areas were remotely sensed using aerial imagery.
- 2.3.4 These limitation are not considered to impact the overall results of the habitat assessment.



## 3 Results

- 3.1.1 The following sections describe the Phase 1 habitat types recorded within and adjacent to the Order Limits. The distribution of habitats present is shown in **Annex A1**, **Figure A-2** and described below in order of prevalence within the Site.
- 3.1.2 The Order Limits cover 1,409ha of low-lying land, of which 799ha is west of the River Trent, 604ha is east of the Trent and the watercourse footprint of the River Trent covers 6ha.

#### 3.2 Arable

- 3.2.1 This habitat type was the most prevalent within the Site, accounting for approximately 1,190ha of the Order Limits. This included ~1,115ha of cropland (cereal and non-cereal crop), ~67ha of temporary grass and clover-leys and ~7ha of field margins, consisting of game bird mix.
- 3.2.2 The arable land is located either side of the River Trent, with an average field size of ~13.3ha to the west of the River Trent and ~7.7ha to the east. It was noted to be intensely farmed cropland with limited field margin features or diversity present. There are several public rights of way (PRoW) that cross the arable land, with some routes bisecting fields and others following field margins.
- 3.2.3 The cropland at the time of survey included a range of spring and autumn sown crops, predominantly cereals, wheat and barley, and non-cereal crops including oil seed rape, broad beans, potato and maize. Throughout the survey period crop rotation (as is expected within arable landscapes) was observed, fields were noted to have been recently sown, cropped, ploughed or laying fallow across the period.
- 3.2.4 Boundary features within the cropland included an array of closely managed hedgerows, treelines and ditches, though diversity was limited across the landscape, with many fields showing similar boundary features across numerous fields.
- 3.2.5 Temporary grass-leys cover ~67ha of the arable land, with one field to the west of the River Trent and nine fields to the east. These leys consist of one or two grass species and have a short, closely clipped sward subject to high levels of irrigation and management input. These leys are harvested for use as turf. Temporary grass and clover-leys are considered as arable crop within the biodiversity net gain assessment due to the topsoil stripping and reseeding required following harvests.

#### 3.3 Improved grassland

- 3.3.1 There is approximately 118ha of modified grassland within the Order Limits consisting permanent pasture, field margins and the banks of the River Trent.
- 3.3.2 There are seven permanent pasture fields, one to the west of the River Trent with six to the east. These pastures are either grazed by sheep or used for silage production, some of which were being cut during the field survey. The grasslands are improved through agricultural sowing and management resulting in a dense and uniform sward, dominated by perennial rye grass and fescues. Other species present rarely within the sward included cocksfoot, barren brome, and meadowgrass.
- 3.3.3 Narrow grass margins (less than 1m in width) were recorded within most arable crop fields, with wider margins recorded in the east of the Order Limits, tending to support a higher diversity of species. Additional species included Yorkshire fog, false oat-grass, soft brome and creeping bent. Forbs present are typical of high nutrient load with frequent nettle, greater willowherb, broad-leaved dock, ribwort plantain, cleavers, creeping thistle, scentless mayweed, herb robert and red-dead nettle.



3.3.4 The banks of the River Trent held a wider variety of graminoids (grasses) and forbs, though there was still evidence of sowing and management consistent with modified grassland. Species within the riverbanks included perennial rye, tall fescue, red fescue, creeping bent, false-oat grass, Yorkshire fog, meadow foxtail, timothy and soft brome. Forbs included cow parsley, field pansy, white campion, herb robert, creeping thistle, nettle, ribwort plantain, hogweed, ragwort and mugwort. The Trent Way, a PRoW extends along the eastern side of the River Trent within the Order Limits. Some areas of this were sheep grazed, whilst others were managed, with cutting taking place at the time of the field survey.

#### 3.4 Poor quality semi-improved grassland

- 3.4.1 There was a single isolated field of poor quality semi-improved grassland, 1.23ha, within the Order Limits. This grassland was located east of the River Trent within a wider landscape of cropland. Due to the recent cutting, species identification was limited however, species were typical of the type of grassland recorded and their management regime.
- 3.4.2 Grasses included soft brome, barren brome, Yorkshire fog, meadow foxtail, crested dog's tail, meadow grass, bent-grass, red fescue, perennial rye-grass, tall fescue and cocksfoot grass. Herb species included common and widespread white clover, creeping buttercup, ribwort plantain, greater plantain, cleavers, common nettle, creeping thistle, yarrow, spear thistle, tufted vetch, dandelion, ground ivy and broad-leaved dock. Locally common species were white campion, field pansy, stitchwort, mugwort, herb-Robert, weld, bugloss, hemlock, white dead-nettle and red deadnettle, common vetch and common sorrel. Due to the species present, the soil type and structure within this field the grassland is considered to fit the description of Other Neutral grassland in the UK Habitats Classification, showing neither a majority of chalk or acid indicator species and clearly being derived from agricultural activity.

## 3.5 Coastal and Floodplain Grazing Marsh

An area of Coastal and Floodplain Grazing Marsh (3.93ha), identified by the Priority Habitat Inventory is located within the Order Limits on the west of the River Trent. The area consists of a single field located northeast of the village of Fledborough on the banks of the Trent.

The species assemblage aligns with modified grassland for hay production and is similar to that further north along the western bank of the River Trent, though the frequency of species occurrence differs. Species indicative of damper conditions including meadow foxtail and Yorkshire fog occur frequently within the sward.

#### 3.6 Semi-natural broadleaved woodland

- 3.6.1 There are 19 parcels of semi-natural broadleaved woodland within the Order Limits covering ~6.7ha. These parcels range in size from 0.01ha to ~2ha and include Lowland Mixed Deciduous Woodland (LMDW) (a priority habitat) and plantation woodlands; containing primarily broadleaved (deciduous) trees or a mix of deciduous and coniferous trees. The woodlands within the Order Limits share a common theme in that lack of management or browsing pressure from herbivores (deer sp. and grey squirrel) has removed much of the understorey / ground flora within the woodlands, resulting in species poor woodlands with a lack of regenerative growth evident throughout. Another shared theme is the lack of gradation between established woodland growth and the adjacent habitats, many of which fall away from mature specimen trees to closely managed modified grassland field margins or cropland.
- 3.6.2 There are nine parcels of LMDW within the Order Limits, covering 3.48ha, these parcels range in size from 0.06ha to 1.7ha within the Limits. All LMDW within the Order Limits have similar species



- assemblages and appear to mark historic boundary features or through-routes. The largest parcel of LMDW is within the northeast of the site and extends beyond the Order Limits. There are two parcels of LMDW within the Order Limits west of the River Trent with seven parcels located on the east.
- 3.6.3 The parcels west of the Trent include a small, isolated copse within the corner of arable fields adjacent to a long-established track<sup>2</sup> and a long narrow strip of woodland associated with a field margin. Both woodlands show similar structure and management regimes having been left for many years. Species include pedunculate oak, ash and field maple with blackthorn and sycamore also present. These woodland parcels lack structural diversity and regeneration with little woodland edge and no gradation between the woodland and adjacent croplands. Connectivity to these woodlands is limited with a series of defunct hedgerows adjoining the woodlands becoming defunct within the arable landscape.
- 3.6.4 The species assemblage within the seven parcels on the east of the Trent is consistent with those in the west, with oak, ash and field maple present. This species mix is typical of lowland British woodland. The parcels include a series of isolated copses along old boundary features, including field boundaries and adjoining an old through-route. The largest LMDW is in the northeast of the Order Limits and consists of oak dominant woodland, with sycamore, hazel, elder and silver birch present.
- 3.6.5 There are 10 parcels of broadleaved woodland plantation, covering ~3.25ha within the Order limits, seven of these contain entirely deciduous species, with three parcels on the west of the Trent and four in the east.
- 3.6.6 The broadleaved plantations, covering ~0.7ha range in size from 0.01ha to 0.18ha and consist of similar species to the LMDW of local provenance though species vary between parcels. Oak is present in all plantation mixes. Field maple is the second most commonly occurring species, followed by sweet chestnut, sycamore and single occurrences of holly, cherry, elder, privet, hazel, guelder rose, rowan, blackthorn and hawthorn.
- 3.6.7 There are three plantations that contain a mix of deciduous and coniferous species covering ~2.5ha within the Order Limits, all of these parcels are east of the River Trent. There are no conifer plantations within the Order Limits.
- 3.6.8 The plantation woodlands vary in age and structural diversity, however the lack of woodland edge habitat is a common trait, with no gradation between mature or semi-mature trees and adjacent habitats. This limits the ecological diversity and usefulness of these woodlands. Some woodlands show signs of recent planting and management, with tree guards or recently compressed ground and little to no established ground flora. Two of the plantations are classed as semi-mature, with some large, well-established trees present. All stands of plantation woodland are comparatively small parcels within an otherwise open landscape. There is no connectivity between these woodland parcels, with large distances between the woodlands located along boundary features, with some plantations being planted entirely isolated from connecting habitat. These copses appear to have been planted without consideration for habitat connectivity and were likely planted for commercial harvest or as part of environmental stewardship schemes, as a result these woodlands are considered to be of limited ecological value.

<sup>&</sup>lt;sup>2</sup> Both the track and woodland is identifiable through historic mapping as being present in 1915. Nottinghamshire XX.NE - OS Six-Inch Map -

https://www.oldmapsonline.org/en/Darlton?gid=75ed3863-b43e-4334-b63e-

<sup>919731</sup>fba052#position=13.9747/53.23877/-0.81108&year=1915



#### 3.7 Scrub-dense/ continuous or scattered

- 3.7.1 Dense continuous scrub (mixed scrub) makes up 17.43ha of the Order Limits, though due to the intensive agricultural nature of the Site, there are very few areas where this habitat occurs within the landscape. Pockets of mixed scrub within the Site, are largely associated with grown out field margins, where a lack of management of hedgerows has enabled them to develop into a wider scrub belt. The largest aggregation of scrub habitat within the survey area is along the embankments of the Sustrans Route 647 that runs east-west through the Order Limits.
- 3.7.2 All scrub habitats within the area are hawthorn dominated, with blackthorn and bramble frequently present. Within the field margins, patches of scrub are small and lacking structural diversity. Along the Sustrans Route (647), the scrub has spread from the old growth towards the top of the disused railway embankments. There is structural and species diversity present within this habitat that is not found elsewhere within the Order Limits, with clear gradation stepping down between stands of mature scrub, through regenerative / establishing scrub and into open grassland and bare ground. There is evidence of herbivore grazing pressure (rabbit and deer) within the areas of lower growth, producing alades and clear rides within the scrub.
- 3.7.3 A large area of mixed scrub within the fenced off National Gird High Marnham substation has been remotely sensed using aerial imagery. It is assumed that this scrub has a similar or better condition than that found along the Sustrans route. This assumption is due to the lack of human influence and disturbance upon the habitats present.

#### 3.8 Bramble scrub

A single stand of bramble scrub covers an area of 0.18ha. This habitat is located directly adjacent to the A1133 road, southeast of North Clifton village. The habitat is isolated within the landscape and offers little ecological value.

#### 3.9 Urban

Within the Order Limits, Urban habitats, include bare ground, artificial unvegetated unsealed surface and developed land with sealed surface cover 64.73ha. These areas include roads, farm tracks, made ground, PRoW and Sustrans Route 647.

Bare ground, including partially vegetated bare ground covers 20.89ha within the Order Limits, the majority of this ground is located within the Nation Grid High Marnham Substation and was therefore remotely sensed. Satellite imagery over time shows very limited vegetation suggesting that it is not open mosaic habitat on previously developed land.

Artificial unvegetated, unsealed surface covers 21.57ha including farm tracks throughout and between the arable land, and the Sustrans Route.

Developed land, sealed surface covers 22.27ha and includes all public roads within the Order Limits and impermeable man-made surfaces within the arable landscape.

The Order Limits do not contain any buildings and so there are no potential protected species concerns associated with built infrastructure.



#### 3.10 Hedgerows

- 3.10.1 A total of 236 hedgerows were recorded equating to a total of approximately 55.4km. Hedgerows were categories based on their physical characteristics and species abundance into the following groups:
  - Native species-poor hedgerow hedgerows with fewer than five woody species present within a 30m stretch.
  - Native species-poor hedgerow associated with a bank or ditch hedgerows with fewer than
    five woody species present within a 30m stretch that are associated with a bank or dry- or
    wet ditch running parallel to the hedge line.
  - Native species-poor hedgerow with trees hedgerows with standard trees present, though fewer than five woody species present within a 30m stretch.
  - Native species-poor hedgerow with trees, associated with a bank or ditch hedgerows with standard trees present, though fewer than five woody species present within a 30m stretch that are associated with a bank or dry- or wet ditch running parallel to the hedge line.
  - Native species-rich hedgerow hedgerows with five or more woody species present within a 30m stretch, or where the hedgerows contain fewer woody species but have rich basal herbaceous flora.
  - Native species-rich hedgerow associated with a bank or ditch hedgerows with five or more
    woody species present within a 30m stretch, or where the hedgerows contain fewer woody
    species but have rich basal herbaceous flora that are associated with a bank or dry- or wet
    ditch running parallel to the hedge line.
  - Native species-rich hedgerow with trees hedgerows with standard trees and five or more
    woody species present within a 30m stretch, or where the hedgerows contain fewer woody
    species but have rich basal herbaceous flora.
  - Native species-rich hedgerow with trees, associated with a bank or ditch hedgerows with standard trees and five or more woody species present within a 30m stretch, or where the hedgerows contain fewer woody species but have rich basal herbaceous flora Native species-rich hedgerow with trees – hedgerows with standard trees and five or more woody species present within a 30m stretch, or where the hedgerows contain fewer woody species but have rich basal herbaceous flora.
- 3.10.2 The majority of hedgerows within the Order Limits are native species-poor intact hedgerows or native species poor defunct hedgerows. With hedgerows varying in length, width and structure though it is evident most receive a similar level of management; with annual flailing to reduce height and width within fields adjacent to agricultural cropland. The hedgerows are cut into box shapes and field margins that lie adjacent are closely mown, maintaining the floral structure as grass and forb species only, with successional scrubby growth removed. There is evidence of under-management in places, with hedges along the northern boundary having grown tall and leggy.
- 3.10.3 Within the Order Limits there are fewer hedgerow features within the area west of the River Trent, than the east. This is likely due to historic land management practices where boundary features have been removed to create larger agricultural fields within the west. Hedgerows within the west of the Order Limits are on average smaller, more species poor and more frequently defunct than those east of the Trent.



- 3.10.4 Species present within the hedgerows include hawthorn, blackthorn, elder, goat willow, hazel, dog rose, sycamore, field maple, pedunculate oak, privet, lilac and wych elm, with guelder rose cherry and holly recorded less frequently. No hedgerows were recorded to have more than six woody species per 30-metre stretch, with most being dominated by hawthorn, or hawthorn and two to three other commonly found species.
- 3.10.5 Several hedgerows have standard trees present, including semi-mature sycamore, lime, pedunculate oak and ash.

Seven hedgerows are considered 'important' hedgerows in-line with The Hedgerow Regulations. This includes the following hedge numbers: H17; H48; H67; H91; H117; H118 and H163 (see **Annex A4**).

#### 3.11 Treelines

- 3.11.1 There are 51 treelines within the Order Limits, equalling approximately 7.2km in length, the majority of which are located to the east of the River Trent. Treelines form borders to agricultural fields, grassland fields, highways and byways, and vary considerably in species assemblage, age and structure.
- 3.11.2 The most common tree species found within the treelines are oak and ash. Other species present include sycamore, horse chestnut, rowan, lime, willow, field maple, sweet chestnut, and Scot's pine.
- 3.11.3 The treelines range from lines of young saplings to those with semi-mature and mature specimens. There are no veteran trees identified within treelines within the Order Limits. The majority of trees within the lines are considered to be semi-mature.

#### 3.12 Standing water

- 3.12.1 There are 25 waterbodies identified within 250m of the Order Limits, with five waterbodies within the Order Limits. Ponds within the Order Limits are small farm pits of low biodiversity value with dense scrub vegetation surrounding the edges and wildfowl present.
- 3.12.2 There are two main ditch systems to the west of the River Trent, both appear to support agricultural land drainage. Many branches of these two major ditch systems appear to remain wet year-round, with outlier (and connecting) branches found to be dry during the field survey. These ditch systems are named on OS mapping as Fledborough Beck and the Old Trent. It is possible that during periods of high flow, these systems become connected via unidentified pathways.
- 3.12.3 The Fledborough Beck drains the fields west of Ragnall village, with the ditch extending more than 6km through the landscape when all systems (including currently dry ditch branches) are considered. The ditch is cut into the landscape at depths varying between 1.5 and 5m deep, with its width at its base being between 0.5 and 1m. At the time of survey there was only shallow water evident, with tall ruderal vegetation and goat willow present.
- 3.12.4 The Old Trent drains fields east of Ragnall, with the ditch extending more than 5km through the landscape. This ditch is cut into the landscape at depths varying between 1.5 and 4m deep with width varying between 0.5 and 2m. At the time of survey there was slow flowing water within this system that was estimated to be 0.5m deep. Tall ruderal vegetation including nettles and bramble occur, with sluice gates present to manage water levels found toward the eastern edge of the ditch.
- 3.12.5 Two major ditch systems are also located to the east of the River Trent, Sewer Dyke which predominantly runs north to south parallel to the River Trent, with branching arms draining adjacent fields, and; a large unnamed channel that is fed by ditches off the fields east of North Clifton and flows north through the Order Limits.



- 3.12.6 The Sewer Dyke is a large ditch system that extends more than 5km through the Order Limits, flowing south to north with water levels managed via a series of sluice gates that feed directly into the River Trent at the Dyke's northern extent. The ditch is between 2 and 4m deep, and 1.5m wide at its base. Water within the base of the ditch appears to be between 0.5 and 1m deep, though water within the system was turbid at time of survey making this difficult to establish with certainty. There was no evidence of emergent or aquatic vegetation in any part of the Dyke at the time of survey.
- 3.12.7 The unnamed channel that drains the fields east of North Clifton is a large ditch system cut between 2 and 3m into the landscape which varies in width between 1.5 and 2m at its base. At the time of survey there was a water depth of approximately 0.3m though, for safety reasons, this was estimated from its bank tops. The main channel is dominated by tall ruderal growth including with reeds. There was evidence during the surveys that this ditch system was used to irrigate the fields adjacent, with a large pump seen to be extracting water.

#### 3.13 Running water

- 3.13.1 The River Trent, a large and navigable river, bisects the Order Limits along a roughly north-south axis. Within the Order Limits, the River Trent presents itself as a major river with a large tidal range, measuring on average 75m wide as it flows for approximately 0.7km through the Order Limits.
- 3.13.2 The River Trent at this location is considered a key migratory route for Atlantic salmon, smelt, sea lamprey, river lamprey, allis shad, twaite shad and European eel.
- 3.13.3 The banks along both sides of the river have been raised adjacent to areas of coastal floodplain grazing marsh and farmland to defend the landscape against frequent flooding events. However, the River still functions semi-naturally and is connected to its floodplains via a complex of ditches and main dykes (which flood during spate flow).
- 3.13.4 The River has historically been deepened and dredged to ensure there is a clear navigable route for large vessels moving quarried materials up and down the Trent between major industrial cities.

#### 3.14 Protected and rare plant species

#### **Notable Species**

3.14.1 No protected and rare plant species were recorded on Site.

#### Legally controlled plant species

3.14.2 No legally controlled invasive non-native plant species were recorded within the Order Limits.

#### Legally protected species

3.14.3 **Table 3-3** indicates habitat suitability of the Phase 1 Habitats recorded within the Study Area for legally protected species. Information pertaining to legally protected species can be found in Appendix 6-4 to 6-9.

Table 3-1: Protected species with the potential of occurring within the DCO Order Limits

Legally protected species	Suitable habitat
Badger	All woodland types, all grassland types, arable fields and scrub. Badger signs were identified widely throughout the Study area and are reported on within Appendix 6-7



Legally protected species	Suitable habitat
Bats	The Site is considered to be of low to moderate quality to bats, with limited connectivity of suitable habitats within the site. Habitats present that have the potential to support roosting bats include broadleaved woodland, hedgerows and treelines. All grassland area, hedgerows, tree lines, woodlands, standing and running water have the potential to support commuting or foraging bats.
Breeding and wintering birds	The open farmland, scrub and woodland habitats within the Order Limits have the potential to support breeding birds, these are reported within Appendix 6-5.
	Open farmland habitats, particularly low-lying floodplain habitats adjacent to the River Trent have the potential to support important assemblages of wintering birds. These are reported on within Appendix 6-8.
Riparian mammals	The watercourses within the Site including The Old Trent, Sewer dyke, Fledborough Beck, an unnamed drainage ditch and the River Trent are considered suitable for water vole and otter. Signs of mink have also been recorded within the Site. These are reported on within Appendix 6.7
Reptiles	Grassland areas, dense scrub, tall ruderal vegetation, marginal areas of wet features including ponds, rivers and ditches are suitable for reptiles however the agricultural landscape is not considered optimal habitat. A reptile survey has been undertaken, with results reported on in Appendix 6.9
Great Crested Newt (GCN)	Semi-improved grassland features, dense scrub, tall ruderal vegetation, ponds and ditches have the potential to support GCN. There are 25 waterbodies within 250m of the Order Limits (See Figure A-2), of which five are located within the Order Limits. A GCN assessment has been undertaken, with results provided in Appendix 6.6
Invertebrates	Habitats present within the Order Limits are common and widespread with large swathes of arable land that is not important for invertebrates. Parcels of semi-improved grassland, dense scrub, tall ruderal vegetation, railway embankments, marginal areas of ponds, rivers and ditches provide habitat for invertebrates but there is not suitable habitat to support important invertebrate assemblages.



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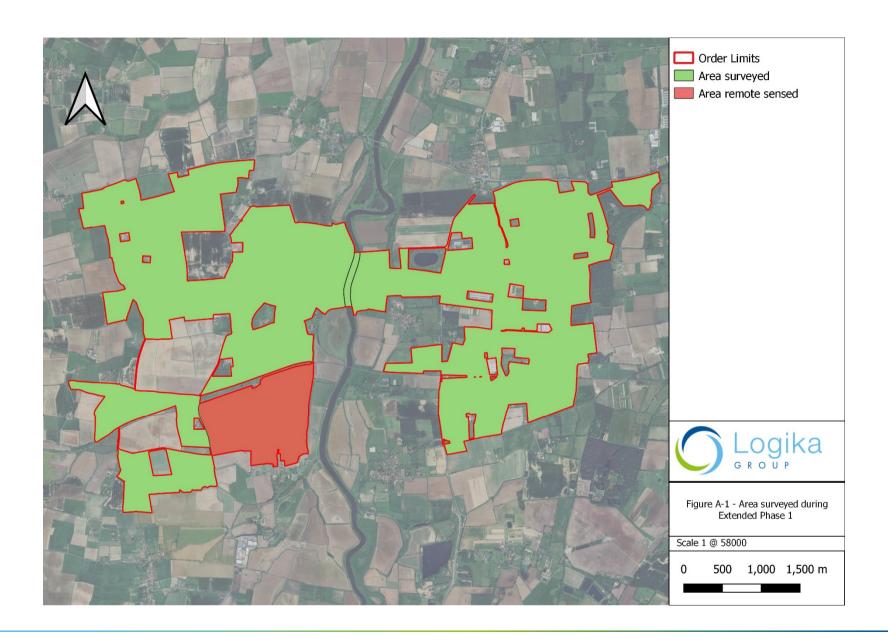
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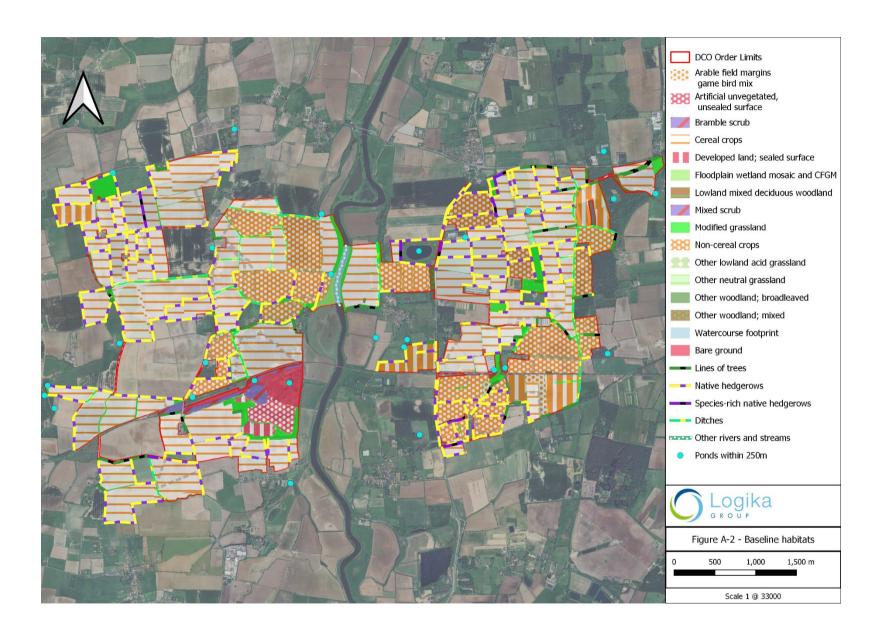


# A1 Annex 1 – Figures

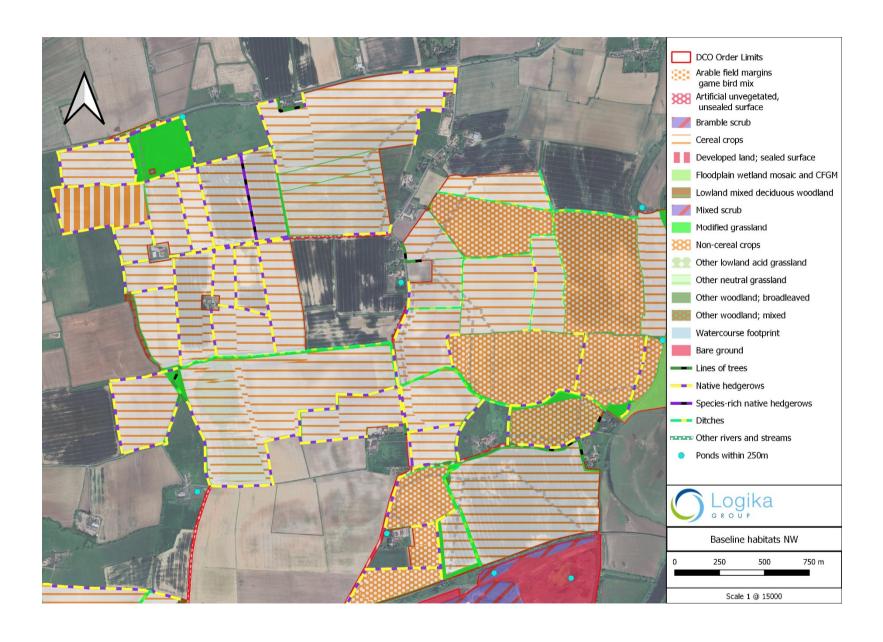




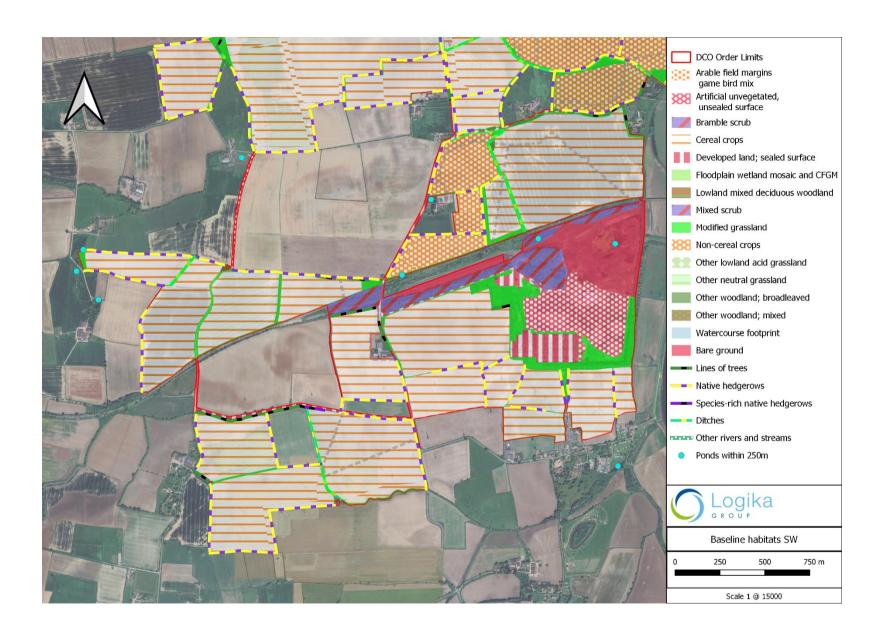




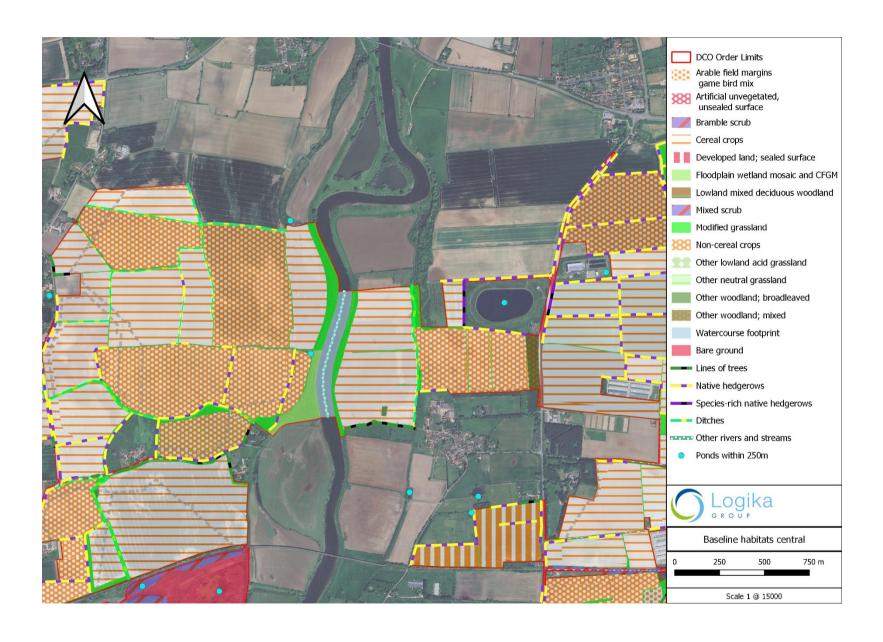




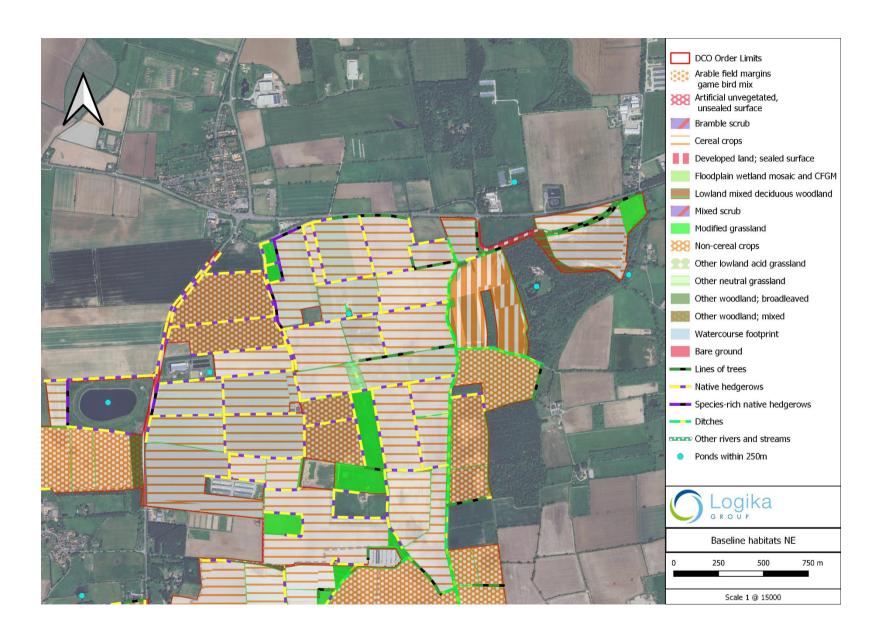




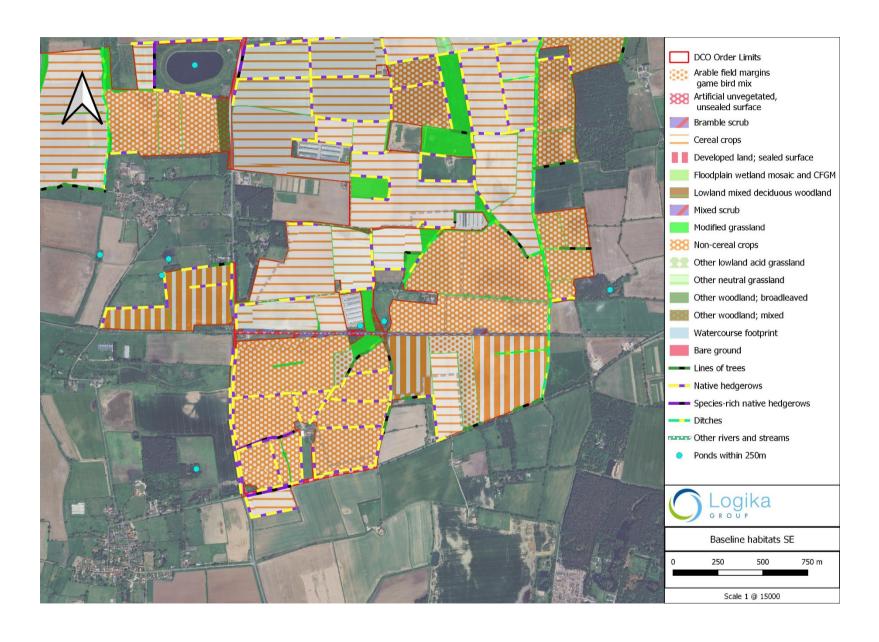














# A2 Annex 2 – Survey details

Table A1 shows survey dates and timings for the Extended Phase 1 habitat surveys.

Table A2 Full survey details of Extended Phase 1 Habitat Survey.

Date	Surveyors	Weather conditions
18/04/2023		8/8 Oktas cloud, Beaufort 2 southwest, visibility >3km, precipitation: none, 16°C
19/04/2023		6/8 Oktas cloud, Beaufort 2 southwest, visibility >3km, precipitation: none, 18°C
20/04/2023		1/8 Oktas cloud, Beaufort 2 southwest, visibility >3km, precipitation: none, 17°C
25/05/2023		2/8 Oktas cloud, Beaufort 1 west, visibility > 3km, precipitation: none, 18°C
26/05/2023		1/8 Oktas cloud, Beaufort 1 southwest, visibility > 3km, precipitation: none, 21°C
27/05/2023		0/8 Oktas cloud, Beaufort 1 southwest, visibility > 3km, precipitation: none, 21°C
02/06/2023		0/8 Oktas cloud, Beaufort 2 southwest, visibility > 3km, precipitation: none, 20°C
03/06/2023		1/8 Oktas cloud, Beaufort 1 south, visibility > 3km, precipitation: none, 23°C
04/06/2023		2/8 Oktas cloud, Beaufort 1 southeast, visibility > 3km, precipitation: none, 22°C
09/06/2023		1/8 Oktas cloud, Beaufort 2 southwest, visibility > 3km, precipitation: none, 23°C
10/06/2023		0/8 Oktas cloud, Beaufort 2 southwest, visibility > 3km, precipitation: none, 25°C



Date	Surveyors	Weather conditions
11/06/2023		1/8 Oktas cloud, Beaufort 2 southwest, visibility > 3km, precipitation: none, 20°C
19/08/2024		1/8 Oktas cloud, Beaufort 1 southwest, visibility > 3km, precipitation: none 22°C
20/08/2024		3/8 Oktas cloud, Beaufort 1 southwest, visibility > 3km, precipitation: none 20°C
21/08/2024		2/8 Oktas cloud, Beaufort 2 southwest, visibility > 3km, precipitation: none 25°C



# A3 Annex 3 – Scientific names

Table A3 Scientific names of species mentioned within Appendix 6.3

English name	Scientific name
Annual meadowgrass	Poa annua
Ash	Fraxinus excelsior
Aspen	Populus tremula
Badger	Meles meles
Barren brome	Anisantha sterilis
Blackthorn	Prunus spinosa
Bramble	Rubus fruticosus
Broad-leaved dock	Rumex obtusifolius
Bugloss	Echium vulgare
Butterbur	Petasites hybridus
Cocksfoot	Dactylis glomerate
Common lime	Tilia x europaea



English name	Scientific name
Common sorrel	Rumex acetosa
Common vetch	Vicia sativa
Cherry Spp.	Prunus agg.
Cleavers	Galium aparine
Cow parsley	Anthriscus sylvestris
Creeping bent	Agrostis stolonifera
Creeping buttercup	Ranunculus repens
Creeping thistle	Cirsium arvense
Crested dog's tail	Cynosurus cristatus
Dandelion agg.	Taraxacum officinale
Deer spp.	Cervidae agg.
Dog rose	Rosa canina
Elder	Sambucus nigra



English name	Scientific name
Elm	Ulmus procera
False oat-grass	Arrhenatherum elatius
Field maple	Acer campestre
Field pansy	Viola arvensis
Goat willow	Salix caprea
Great crested newt	Triturus cristatus
Greater willowherb	Epilobium hirsutum
Grey squirrel	Sciurus carolinensis
Ground ivy	Glechoma hederacea
Guelder rose	Viburnum opulus
Hawthorn	Crataegus monogyna
Hazel	Corylus avellana
Hedge bindweed	Calystegia sepium



English name	Scientific name
Hemlock	Conium maculatum
Herb robert	Geranium robertianum
Himalayan balsam	Impatiens glandulifera
Hogweed	Heracleum sphondylium
Holly	Ilex aquifolium
Horse chestnut	Aesculus hippocastanum
Japanese knotweed	Fallopia japonica
Lilac	Syringa vulgaris
Meadow foxtail	Alopecurus pratensis
Mugwort	Artemisia vulgaris
Nettle	Urtica dioica
Otter	Lutra lutra
Pedunculate oak	Quercus robur



English name	Scientific name
Perennial rye grass	Lolium perenne
Privet	Ligustrum vulgare
Rabbit	Oryctolagus cuniclus
Ragwort	Jacobaea vulgaris
Red-dead nettle	Lamium purpureum
Red fescue	Festuca rubra
Ribwort plantain	Plantago lanceolata
Rowan	Sorbus aucuparia
Scentless mayweed	Tripleurospermum inodorum
Scot's pine	Pinus sylvestris
Silver birch	Betula pendula
Soft brome	Bromus hordeaceus
Spear thistle	Cirsium vulgare



English name	Scientific name
Stitchwort	Stellaria holostea
Sweet chestnut	Castanea sativa
Sycamore	Acer pseudoplatanus
Tall fescue	Lolium aruninaceum
Timothy	Phleum pratense
Tufted vetch	Vicia cracca
Water vole	Arvicola amphibius
Wayfaring tree	Viburnum lantana
Weld	Reseda luteola
White byrony	Bryonia dioica
White campion	Silene latifolia
White clover	Trifolium repens
White dead-nettle	Lamium album



English name	Scientific name
Willow spp.	Salix spp.
Wych elm	Ulmus glabra
Yarrow	Achillea millefolium
Yorkshire fog	Holcus lanatus





# A4 Annex 4 – Hedgerows and treelines

 Table A4
 Hedgerows and treeline within Order Limits

Hedge reference	Hedge type	Length (M)	Description
H1	Ecologically valuable line of trees - associated with bank or ditch	79	Treeline with remnant hedge. Mature oak with hawthorn plants at base.
H2	Ecologically valuable line of trees - associated with bank or ditch	146	Treeline with remnant hedge. Mature oak with hawthorn plants at base.
Н3	Line of trees	399	Remnant hedgerow with treeline. Blackthorn and hawthorn, salix. field pansy, white campion.
H4	Ecologically valuable line of trees	515	Continuous canopy. Hawthorn hedge with oak standards. Dog rose and bramble
Н5	Native hedgerow - associated with bank or ditch	59	Good size and structure. Hawthorn hedge with two oaks identified but not as standards
Н6	Native hedgerow with trees	167	Intensive management resulting in frequent gaps in canopy and at base. Hawthorn hedge with two oaks identified but not as standards.
H7	Native hedgerow	92	Intensively managed with gaps in base. Hawthorn and blackthorn.
Н8	Native hedgerow with trees	29	Tall with formation of individual plants and gaps in base. Hawthorn and Blackthorn.



Hedge reference	Hedge type	Length (M)	Description
Н9	Line of trees	213	Remnant hedge at base. Hawthorn hedge, with oak.
H10	Line of trees	191	Remnant hedge at base. Elm hedge, with hawthorn, ash and semi-mature lime.
H11	Native hedgerow with trees	333	Intensive cutting regime. Elm hedge.
H12	Native hedgerow with trees	435	Low-level management with good size and structure. Hawthorn.
H13	Native hedgerow	582	Intensive cutting regime with frequent gaps. Hawthorn.
H14	Native hedgerow	536	Intensive cutting regime with frequent gaps. Hawthorn.
H15	Native hedgerow - associated with bank or ditch	755	Intensive cutting regime. Hawthorn hedge, with elder, field maple, elm, blackthorn
H15	Native hedgerow - associated with bank or ditch	203	Intensive cutting regime resulting in frequent gaps. Hawthorn
H16	Native hedgerow	178	Intensive cutting regime. Hawthorn with apple and ash standards.
H17	Species-rich native hedgerow	389	Intensive cutting regime. Hawthorn with occasional elder
Н18	Native hedgerow	141	Intensive cutting regime. Hawthorn hedge with frequent elder and abundant



Hedge reference	Hedge type	Length (M)	Description
H19	Native hedgerow with trees	208	Intensive cutting regime resulting in frequent gaps. Hawthorn with occasional elder and a mature oak standard.
H20	Native hedgerow with trees - associated with bank or ditch	404	Intensive cutting regime. Hawthorn with occasional elder and a mature oak standard.
H21	Native hedgerow	276	Intensive cutting regime resulting in frequent gaps. Hawthorn with occasional elder and mature oak standards.
H22	Native hedgerow with trees	388	Intensive cutting regime resulting in frequent gaps. Hawthorn with two mature willow standards.
H23	Native hedgerow	292	Intensive cutting regime resulting in frequent gaps. Hawthorn with a couple of patches of young willow.
H24	Native hedgerow with trees - associated with bank or ditch	411	Intensive cutting regime. Hawthorn hedge
H25	Native hedgerow with trees	108	Intensive cutting regime. Hawthorn.
H26	Native hedgerow - associated with bank or ditch	451	Intensive cutting regime. Hawthorn and blackthorn.
H27	Native hedgerow	208	Low-level management with good size and structure. Blackthorn with individual hawthorn and willow.
H28	Native hedgerow	238	Intensive cutting regime. Elm hedge with hawthorn and elder



Hedge reference	Hedge type	Length (M)	Description
H29	Native hedgerow	149	Low-level management with good size and structure. Hawthorn hedge and one standard willow.
H30	Native hedgerow	165	Intensive cutting regime. Hawthorn hedge, a couple of elder plants further south.
H31	Native hedgerow - associated with bank or ditch	126	Low-level management with good size and structure. Hawthorn hedge. Some ash but growing tall and one standard willow
H32	Native hedgerow	214	Low-level management with good size and structure. Hawthorn hedge. Some ash but growing tall and one standard willow and ash standards
H33	Native hedgerow with trees - associated with bank or ditch	98	Intensive cutting regime. Unknown.
H34	Native hedgerow with trees	80	Low-level management with good size and structure. Mature sycamore and oak with hawthorn and blackthorn.
H35	Native hedgerow with trees - associated with bank or ditch	175	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with oak standards.
H36	Species-rich native hedgerow with trees - associated with bank or ditch	334	Low-level management with good size and structure. Hawthorn hedge. Also has privet, elder, field maple and two oak and one ash standard.
H37	Native hedgerow with trees	344	Intensive management regime. Hawthorn with oak and field maple standards. Cow parsley and false brome ground flora.
H38	Native hedgerow with trees	57	Low-level management with good size and structure. Elm with field maple and ash, ground flora of cocksfoot, false oat grass, cleavers and cow parsley.



Hedge	Hedge type	Length	Description
reference		(M)	
Н39	Native hedgerow	123	Intensive management regime. Hawthorn.
H40	Native hedgerow	421	Frequent gaps. Hawthorn with field maple and sycamore, privet, white bryony.
H41	Ecologically valuable line of trees	331	Low-level management with good size and structure. Hawthorn hedge with privet, elder, field maple and two oak and one ash standard.
H42	Native hedgerow with trees	129	Intensive cutting regime. Hawthorn.
H43	Species-rich native hedgerow with trees	100	Frequent gaps. Hawthorn.
H44	Species-rich native hedgerow with trees	79	Low-level management with good size and structure. Hawthorn with Oak standard.
H45	Native hedgerow	74	Low-level management with good size and structure. Hawthorn, field maple, ash, oak, hazel and sycamore standards.
H46	Native hedgerow	107	Tall with formation of individual plants and gaps in base. Elm and hawthorn with oak standards
H47	Native hedgerow with trees	245	Frequent gaps. Hawthorn hedge and elm.
H48	Species-rich native hedgerow with trees	923	Low-level management with good size and structure. Hawthorn, field maple, ash, oak, hazel and sycamore.



Hedge reference	Hedge type	Length (M)	Description
H49	Native hedgerow with trees - associated with bank or ditch	191	Low-level management with good size and structure. Hawthorn with elm
H50	Native hedgerow with trees	116	Frequent gaps. Hawthorn with ash and oak standards.
H51	Line of trees - associated with bank or ditch	295	Frequent gaps. Hawthorn.
H52	Line of trees - associated with bank or ditch	230	Tree line. Unknown
H53	Native hedgerow with trees	476	Tree line. Unknown
H54	Native hedgerow	246	Low-level management with good size and structure. Hawthorn with cherry and blackthorn.
H55	Native hedgerow with trees - associated with bank or ditch	140	Low-level management with good size and structure. Mature sycamore and oak with hawthorn and blackthorn becoming more abundant further west. Mature ash at eastern end.
H56	Native hedgerow with trees - associated with bank or ditch	212	Tall with formation of individual plants and gaps in base. Overgrown blackthorn hedge, with oak standard.
H57	Native hedgerow with trees - associated with bank or ditch	109	Frequent gaps. Hawthorn hedge with oak and ash standards, bramble scrub around ash trees.
H58	Ecologically valuable line of trees - associated with bank or ditch	451	Mature line of trees with continuous canopy. Oak and ash dominated.



Hedge reference	Hedge type	Length (M)	Description
Н59	Native hedgerow with trees	234	Intensive cutting regime. Unknown
H60	Line of trees - associated with bank or ditch	165	Tree line. Unknown
Н61	Line of trees - associated with bank or ditch	157	Continuous treeline canopy with remnant hedge at base. Hawthorn hedge with bramble and dog rose.
H62	Native hedgerow - associated with bank or ditch	448	Good size and structure. Hawthorn hedge with bramble and dog rose with standard ground flora.
H63	Native hedgerow with trees - associated with bank or ditch	118	Good size but with frequent gaps. Hawthorn hedge with patches of dense ivy growth. Hazel locally abundant.
H64	Native hedgerow - associated with bank or ditch	445	Good size and structure. Hawthorn with abundant dog rose and single standard halfway. Also has blackthorn, occasional goat willow, hazel, field maple. Oak is semi-mature.
H65	Native hedgerow - associated with bank or ditch	203	Good size and structure. Hawthorn hedge and rare elder recorded at eastern end.
H66	Native hedgerow with trees - associated with bank or ditch	484	Remnant hedgerow in small sections. Hawthorn hedge, remnants. Elm recorded in longest section, as well as white bryony.
H67	Species-rich native hedgerow - associated with bank or ditch	793	Good size and structure. Hawthorn hedge with oak and field maple.



Hedge reference	Hedge type	Length (M)	Description
H68	Native hedgerow - associated with bank or ditch	121	Intensive cutting regime with some gaps. Hawthorn and blackthorn with privet and wych elm and a single mature oak standard.
H69	Native hedgerow	179	Intensive cutting regime. Hawthorn and dog rose with occasional blackthorn.
H70	Native hedgerow - associated with bank or ditch	106	Intensive cutting regime. Hawthorn hedge. With ash and blackthorn and abundant dog rose.
H71	Native hedgerow - associated with bank or ditch	71	Intensive management regime. Hawthorn.
H72	Native hedgerow with trees - associated with bank or ditch	172	Intensive cutting regime. Hawthorn hedge with abundant dog rose growth.
H73	Native hedgerow - associated with bank or ditch	133	Intensive cutting regime. Hawthorn and dog rose with occasional blackthorn.
H74	Ecologically valuable line of trees - associated with bank or ditch	609	Intensive cutting regime. Hawthorn and dog rose with occasional blackthorn.
H75	Native hedgerow - associated with bank or ditch	288	Intensive cutting regime. Hawthorn
H76	Native hedgerow - associated with bank or ditch	249	Intensive management regime. Hawthorn
H77	Native hedgerow - associated with bank or ditch	596	Intensive management regime. Hawthorn



Hedge reference	Hedge type	Length (M)	Description
H78	Native hedgerow - associated with bank or ditch	49	Intensive cutting regime. Hawthorn hedge with one hazel.
H79	Ecologically valuable line of trees - associated with bank or ditch	54	Mature line of trees with continuous canopy. Oak and ash dominated
H80	Ecologically valuable line of trees - associated with bank or ditch	225	n/a. Oak and ash dominated.
H81	Native hedgerow - associated with bank or ditch	145	Intensive management regime. Hawthorn.
H82	Native hedgerow - associated with bank or ditch	245	Intensive management regime. Hawthorn.
H83	Native hedgerow - associated with bank or ditch	331	Intensive cutting regime. Hawthorn hedge.
H84	Native hedgerow - associated with bank or ditch	250	Intensive cutting regime. Hawthorn hedge 1.5 $\times$ 1.5m. With blackthorn, elder and dog rose.
H85	Native hedgerow	233	Intensive cutting regime. Hawthorn with tall ruderal dominated by hemlock with common nettle and butterbur.
H86	Native hedgerow - associated with bank or ditch	251	Intensive cutting regime. Hawthorn with tall ruderal dominated by hemlock with common nettle and butterbur.
H87	Native hedgerow	40	Intensive cutting regime. Hawthorn with tall ruderal dominated by hemlock with common nettle and butterbur.



Hedge reference	Hedge type	Length (M)	Description
H88	Native hedgerow	434	Low-level management resulting in tall leggy growth. Hawthorn with elder, blackthorn and goat willow and dense patches of ivy.
H89	Native hedgerow	133	Intensive cutting regime. Hawthorn and blackthorn
H90	Native hedgerow	424	Intensive cutting regime. Hawthorn hedge with sycamore and hazel
H91	Native hedgerow	104	Intensive management regime. Hawthorn.
H92	Native hedgerow	105	Intensive cutting regime. Hawthorn with blackthorn, field maple, elder, and willow standards
H93	Native hedgerow with trees - associated with bank or ditch	289	Intensive cutting regime. Hawthorn with blackthorn, field maple, elder, and field maple standards.
H94	Native hedgerow with trees	389	Some gaps but largely intact. Hawthorn and ash standards.
H95	Native hedgerow with trees	215	Good structure with variable height. Hawthorn standards with elder and blackthorn but mainly hawthorn. Turns into treeline at northern end, ash and crab apple.
H96	Native hedgerow with trees - associated with bank or ditch	244	Gaps in base but with continuous canopy. Hawthorn, blackthorn, elder, willow, and field maple. One field maple standard
Н97	Native hedgerow with trees - associated with bank or ditch	183	Gaps in base but with continuous canopy. Hawthorn, blackthorn, elder, willow, and field maple. One field maple standard.



Hedge reference	Hedge type	Length (M)	Description
H98	Native hedgerow with trees - associated with bank or ditch	299	Intensive cutting regime. Hawthorn, blackthorn, elder, willow, and field maple. One field maple standard
H99	Native hedgerow with trees - associated with bank or ditch	339	Intensive cutting regime. Hawthorn with elder and blackthorn, crab apple standard and ash at western end.
H100	Native hedgerow with trees	242	Intensive cutting regime. Hawthorn
H101	Native hedgerow with trees	198	Intensive cutting regime. Hawthorn with elder and blackthorn, standard at eastern end.
H102	Native hedgerow with trees - associated with bank or ditch	181	Variable in height but narrow. Hawthorn with ash standard at northern end.
H103	Native hedgerow with trees	366	Low-level management resulting in tall leggy growth. Hawthorn hedge with bramble, dogrose and blackthorn
H104	Native hedgerow with trees - associated with bank or ditch	214	Low-level management resulting in tall leggy growth. Hawthorn with field maple
H105	Native hedgerow - associated with bank or ditch	73	Intensive cutting regime. Hawthorn with elder
H106	Native hedgerow with trees - associated with bank or ditch	348	Intensive cutting regime. Hawthorn with standards



Hedge reference	Hedge type	Length (M)	Description
H107	Native hedgerow	199	Intensive cutting regime. hawthorn with field maple and blackthorn and ash standards
H108	Native hedgerow with trees	85	Intensive cutting regime with gaps. Hawthorn and sycamore
H109	Native hedgerow with trees - associated with bank or ditch	200	Intensive cutting regime. Hawthorn.
H110	Native hedgerow	258	Intensive cutting regime. Hawthorn hedge with standards
H111	Line of trees	49	Tree line. Unknown.
H112	Native hedgerow with trees	289	Intensive cutting regime. Hawthorn
H113	Native hedgerow - associated with bank or ditch	179	Intensive cutting regime. Hawthorn
H114	Native hedgerow - associated with bank or ditch	82	Intensive cutting regime. Hawthorn
H115	Line of trees	96	Continuous treeline canopy with remnant hedge at base. Further west is field maple, blackthorn and elder.
H116	Line of trees	101	Continuous treeline canopy with remnant hedge at base. Hawthorn and blackthorn with ash standards.



Hedge reference	Hedge type	Length (M)	Description
H117	Native hedgerow	552	Intensive cutting resulting in frequent gaps. Hawthorn, blackthorn and field maple.
H118	Native hedgerow with trees - associated with bank or ditch	260	Intensive cutting regime. Hawthorn and blackthorn with ash standards.
H119	Native hedgerow with trees - associated with bank or ditch	157	Intensive cutting regime. Hawthorn hedge with oak and sycamore standards.
H120	Native hedgerow with trees	581	Good structure which widens in places. Hawthorn hedge, widens out in places with a couple of standards.
H121	Native hedgerow with trees - associated with bank or ditch	450	Intensive management with gaps in base but continuous canopy. Blackthorn hedge with ash standards.
H122	Native hedgerow with trees - associated with bank or ditch	464	Intensive cutting regime. Hawthorn and blackthorn with oak standards
H123	Native hedgerow with trees - associated with bank or ditch	346	Recent planting resulting in gappy base. Hawthorn mostly young growth with occasional blackthorn, elder and field maple, semi mature ash standards
H124	Line of trees	98	Continuous treeline canopy with remnant hedge at base. Hawthorn mostly young growth with occasional blackthorn, elder and field maple, semi mature ash standards
H125	Native hedgerow with trees - associated with bank or ditch	382	Recent planting resulting in gappy base. Hawthorn with elder.



Hedge reference	Hedge type	Length (M)	Description
H126	Native hedgerow with trees	373	Recent planting resulting in gappy base. Hawthorn
H127	Native hedgerow	237	Intensive cutting regime. Hawthorn and blackthorn
H128	Native hedgerow	365	Several small sections of remnant hedgerow. Hawthorn hedge with ash, pine and oak standards.
H129	Line of trees - associated with bank or ditch	630	Continuous treeline canopy with remnant hedge at base. Ash and oak with hawthorn
H130	Native hedgerow with trees	394	Intensive cutting regime. Hawthorn hedge with associated ditch and alder (non-native) standards. Also has wayfaring, blackthorn, aspen, bindweed,
H131	Native hedgerow with trees - associated with bank or ditch	400	Intensive management with gaps in base but continuous canopy. Blackthorn and hawthorn with section of plum at one end.
H132	Species-rich native hedgerow with trees - associated with bank or ditch	101	Intensive cutting resulting in frequent gaps. Hawthorn, hazel, ash, field maple and blackthorn with ash standards.
H133	Native hedgerow	304	Intensive cutting regime. Hawthorn and blackthorn.
H134	Native hedgerow with trees - associated with bank or ditch	239	Tall with formation of individual plants. Hawthorn, blackthorn and ash standards.
H135	Line of trees	90	n/a. Lime sp.



Hedge reference	Hedge type	Length (M)	Description
H136	Native hedgerow with trees	65	Tall with formation of individual plants and gaps in base. Lime sp.
H137	Line of trees	244	Continuous treeline canopy with remnant hedge at base. Hawthorn, sycamore, field maple, with standard species horse chestnut, sycamore, birch, field maple and oak.
H138	Line of trees	162	Continuous treeline canopy with remnant hedge at base. Hawthorn, sycamore, field maple, with standard species horse chestnut, sycamore, birch, field maple and oak.
H139	Native hedgerow	337	Intensive cutting regime. Hawthorn
H140	Native hedgerow with trees	243	Intensive management resulting in frequent gaps. Hawthorn and blackthorn hedge with ash standards
H141	Native hedgerow - associated with bank or ditch	165	Intensive cutting regime. Hawthorn
H142	Native hedgerow with trees - associated with bank or ditch	224	Intensive cutting regime. Hawthorn.
H143	Line of trees	34	Small sections of tree line. Oak and ash dominated
H144	Line of trees	29	Small sections of tree line. Oak and ash dominated
H145	Line of trees	26	Small sections of tree line. Oak and ash dominated



Hedge reference	Hedge type	Length (M)	Description
H146	Line of trees	20	Small sections of tree line. Oak and ash dominated
H147	Line of trees	41	Small sections of tree line. Oak and ash dominated
H148	Line of trees	28	Small sections of tree line. Oak and ash dominated
H149	Line of trees	18	Small sections of tree line. Oak and ash dominated.
H150	Line of trees	73	Tree line. Unknown.
H151	Line of trees	120	Tree line. Unknown.
H152	Native hedgerow	210	Intensive cutting regime with large gaps. Hawthorn
H153	Native hedgerow	272	Intensive cutting regime. Hawthorn
H154	Native hedgerow	167	Intensive management resulting in frequent gaps. Hawthorn
H155	Line of trees	77	Tree line. Hawthorn with frequent mature oak.
H156	Native hedgerow with trees	335	Intensive management resulting in frequent gaps. Hawthorn



Hedge reference	Hedge type	Length (M)	Description
H157	Native hedgerow with trees - associated with bank or ditch	122	Tall with formation of individual plants. Hawthorn with oak standards at either end.
H158	Native hedgerow	162	Intensive cutting regime. Blackthorn with ash, ivy, dog rose and ash, oak and willow standards.
H159	Native hedgerow with trees - associated with bank or ditch	332	Young so not fully formed. Hawthorn with elder.
H160	Native hedgerow with trees - associated with bank or ditch	211	Intensive cutting regime with gaps in base and canopy. Hawthorn
H161	Native hedgerow	143	Intensive cutting regime. Hawthorn, dog rose, ash. Further west is elder, oak and sycamore, field maple, blackthorn
H162	Native hedgerow	281	Intensive cutting regime. Blackthorn, hawthorn and hazel, with single field maple at end
H163	Species-rich native hedgerow	329	Intermittent cutting allowing good structure to form. Hazel, hawthorn, elder, section of wych elm treeline.
H164	Native hedgerow	179	Intensive cutting regime. Hawthorn
H165	Native hedgerow	175	Intensive cutting regime. Hawthorn with two oak standards and ash standards at northern end
H166	Native hedgerow	205	Intensive cutting regime. Blackthorn and hawthorn.



Hedge reference	Hedge type	Length (M)	Description
H167	Native hedgerow with trees	243	Intensive cutting regime. Hawthorn, elm, ash, oak, field maple with dense bramble, nettle and blackthorn.
H168	Native hedgerow	255	Intensive management resulting in frequent gaps. Hawthorn
H169	Species-rich native hedgerow	243	Low-level management resulting in tall leggy growth. Hawthorn with ash standards.
H170	Native hedgerow	261	Intensive cutting regime. Hawthorn but with very dense nettle and bramble
H171	Native hedgerow with trees	112	Intensive cutting regime. Hawthorn
H172	Native hedgerow	44	Intensive cutting regime. Blackthorn and hawthorn with occasional oak and elder.
H173	Native hedgerow	183	Intensive cutting regime. Blackthorn and hawthorn with occasional oak and elder.
H174	Native hedgerow	162	Intensive cutting regime. Hawthorn, goat willow, apple and blackthorn, with nettle, hogweed, cleavers and bramble in base
H175	Native hedgerow	125	Intensive cutting with recent planting. Hawthorn, with elder, mugwort, dogrose and bramble at base
H176	Native hedgerow	203	Intensive cutting regime. Hawthorn



Hedge reference	Hedge type	Length (M)	Description
H177	Native hedgerow	158	Intensive cutting regime. Hawthorn.
H178	Native hedgerow	348	Intensive cutting regime. Blackthorn, hawthorn, hazel and a mature oak standard
H179	Native hedgerow	301	Tall with formation of individual plants. Hawthorn and blackthorn with oak standards.
H180	Native hedgerow with trees - associated with bank or ditch	166	Tall with formation of individual plants. Hawthorn and blackthorn with oak standards further south.
H181	Native hedgerow with trees - associated with bank or ditch	166	Intensive cutting regime. Blackthorn with ash, ivy, dog rose and ash and willow standards
H182	Native hedgerow with trees - associated with bank or ditch	53	Intensive cutting regime. Hawthorn
H183	Native hedgerow with trees - associated with bank or ditch	67	Intensive cutting regime. Hawthorn.
H184	Line of trees - associated with bank or ditch	98	Small sections of tree line. Oak and ash dominated
H185	Line of trees - associated with bank or ditch	80	Small sections of tree line. Oak and ash dominated
H186	Line of trees - associated with bank or ditch	50	Intensive cutting regime. Blackthorn, hawthorn, ash and ash standards



Hedge reference	Hedge type	Length (M)	Description
H187	Line of trees	76	Tall with formation of individual plants. Elder, with very dense bracken
H188	Native hedgerow with trees - associated with bank or ditch	68	Remnant hedgerow with trees. Hawthorn with oak and ash standards
H189	Native hedgerow	231	Intensive cutting regime. Hawthorn and elder
Н190	Line of trees		n/a. Unknown
Н191	Line of trees	80	n/a. Hawthorn with elder and ash, with ash standards
H192	Line of trees	100	n/a. Hawthorn with elder and ash, with ash standards
H193	Native hedgerow with trees - associated with bank or ditch	132	Intensive cutting regime. Blackthorn and hazel hedge.
H194	Native hedgerow	15	n/a. Leylandii hedge
Н195	Native hedgerow	27	Intensive cutting regime. Blackthorn and hazel hedge
Н196	Native hedgerow	47	Short sections of remnant hedgerow. Hawthorn and blackthorn
H197	Native hedgerow	111	Short sections of remnant hedgerow. Hawthorn and blackthorn



Hedge reference	Hedge type	Length (M)	Description
H198	Native hedgerow with trees	81	Very tall, unmanaged hedgerow. Hawthorn and blackthorn with standards
H199	Native hedgerow with trees - associated with bank or ditch	212	Intensive cutting regime. Hawthorn hedge with occasional hazel
H200	Native hedgerow with trees - associated with bank or ditch	145	Intensive cutting regime. Hawthorn hedge with occasional hazel
H201	Native hedgerow - associated with bank or ditch	324	Intensive cutting regime. Hawthorn hedge, with elder, blackthorn, dog rose and white bryony
H202	Native hedgerow - associated with bank or ditch	255	Intensive cutting regime. Hawthorn hedge, with elder, blackthorn, dog rose and white bryony
H203	Native hedgerow - associated with bank or ditch	329	Intensive cutting regime. Hawthorn hedge, with elder, blackthorn, dog rose and white bryony.
H204	Native hedgerow with trees	163	Intensive cutting regime. Hawthorn hedge with elder, blackthorn, dog rose and white bryony and ash standards
H205	Native hedgerow	117	Intensive cutting regime. Hawthorn hedge with occasional hazel.
H206	Native hedgerow - associated with bank or ditch	50	Intensive cutting regime. Hawthorn hedge with occasional hazel
H207	Native hedgerow - associated with bank or ditch	28	Intensive cutting regime. Hawthorn hedge with occasional hazel



Hedge reference	Hedge type	Length (M)	Description
H208	Line of trees	110	Small sections of tree line. Oak and ash dominated
H209	Native hedgerow	188	Appear intensively managed. Unknown
H210	Native hedgerow with trees - associated with bank or ditch	292	Appear intensively managed. Unknown
H211	Native hedgerow with trees	178	Appear intensively managed. Unknown
H212	Native hedgerow	179	Appear intensively managed. Unknown
H213	Native hedgerow	207	Appear intensively managed. Unknown
H214	Native hedgerow	200	Intensive cutting regime. Hawthorn, blackthorn, field maple, elder, hazel, oak. Typical ruderal ground flora and field maple, ash and oak standards further north.
H215	Native hedgerow	481	Intensive cutting regime. Hawthorn, blackthorn, field maple, elder, hazel, oak. Typical ruderal ground flora and field maple, ash and oak standards further north.
H216	Native hedgerow with trees	255	Intensive cutting regime. Unknown
H217	Native hedgerow	46	Tall with formation of individual plants and gaps in base. Hawthorn



Hedge reference	Hedge type	Length (M)	Description
H218	Native hedgerow with trees	97	Tall with formation of individual plants and gaps in base. Hawthorn with oak.
H219	Ecologically valuable line of trees	75	Mature tree line. Oak
H220	Line of trees	148	Tree line. Unknown
H221	Ecologically valuable line of trees	183	Intensive cutting regime. Defunct hawthorn hedge, $1.5 \times 1.5 \text{m}$ with large gaps between sections and a dry ditch. Occasional field maple, blackthorn and privet.
H222	Native hedgerow	271	Intensive cutting regime. Intact hawthorn hedge but gaps between sections and at base, $1 \times 1 \text{m}$ . Northern end has blackthorn, elder and hazel.
H223	Native hedgerow - associated with bank or ditch	172	Intensive cutting regime. Intact hawthorn hedge, $1.5 \times 1.5 \text{m}$ with no associations and typical ground flora for area. Frequent blackthorn, occasional field maple and rare hazel and guelder rose.
H224	Native hedgerow	54	Low level management and supplemental planting in last 15 years. Goat willow, elder, field maple, cherry, hawthorn and blackthorn.
H225	Native hedgerow	564	Intensive cutting regime. Elm hedge with occasional field maple and hawthorn. Dead elm. Elder and blackthorn rare.
H226	Species-rich native hedgerow	247	Intensive cutting regime. Hawthorn hedge with single semi-mature oak at northern end. Dense dog rose growth.



Hedge reference	Hedge type	Length (M)	Description
H227	Native hedgerow	114	Intensive cutting regime. Hawthorn with blackthorn at northern end and dense bramble and tall ruderal growth in between sections.
H228	Native hedgerow	101	Intensive cutting regime. Hawthorn hedge with elder
H229	Line of trees - associated with bank or ditch	417	Intensive cutting regime. Hawthorn with elder.
H230	Native hedgerow	142	Intensive cutting regime. Hawthorn with elder.
H231	Native hedgerow	104	Intensive cutting regime. Hawthorn hedge with ash, elder and field maple and a single ash standard.
H233	Native hedgerow with trees	197	Intensive cutting regime. Hawthorn hedge with oak standard. Elder.
H234	Line of trees	120	Intensive cutting regime. Hawthorn hedge
H235	Native hedgerow with trees	157	Tall with formation of individual plants and gaps in base. Hawthorn hedge with ash and sycamore.
H236	Native hedgerow	143	Tall with formation of individual plants and gaps in base. Blackthorn hedge with hawthorn.
H237	Native hedgerow	78	Tall with formation of individual plants and gaps in base. Hawthorn hedge.



Hedge reference	Hedge type	Length (M)	Description
H238	Native hedgerow	85	Tall with formation of individual plants and gaps in base. Blackthorn hedge with hawthorn.
H239	Native hedgerow	91	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with privet and wych elm and a single mature oak standard.
H240	Native hedgerow	340	Intensive cutting regime. Hawthorn with elder and abundant hemlock growth single pine at western end.
H241	Native hedgerow	173	Intensive cutting regime. Hawthorn hedge with elder
H242	Native hedgerow	186	Intensive cutting regime. Hawthorn hedge with elder
H243	Native hedgerow	144	Intensive management regime. Hawthorn
H244	Native hedgerow with trees	134	Intensive management regime. Hawthorn with oak
H245	Native hedgerow	160	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn
H246	Native hedgerow with trees - associated with bank or ditch	447	Intensive management regime. Hawthorn and standards
H247	Native hedgerow	196	Intensive management regime. Hawthorn
H248	Native hedgerow	282	Intensive management regime. Hawthorn



Hedge reference	Hedge type	Length (M)	Description
H249	Native hedgerow	266	Intensive management regime. Hawthorn
H250	Native hedgerow - associated with bank or ditch	259	Intensive management regime. Hawthorn
H251	Ecologically valuable line of trees - associated with bank or ditch	96	Continuous mature treeline. Oak and non-native species
H252	Line of trees	111	Continuous mature treeline. None-natives
H253	Native hedgerow	69	Intensive management regime. Hawthorn
H254	Native hedgerow - associated with bank or ditch	123	Intensive management regime. Hawthorn
H255	Native hedgerow - associated with bank or ditch	322	Intensive management regime. Hawthorn
H256	Native hedgerow	265	Intensive management regime. Hawthorn
H257	Native hedgerow	278	Intensive management regime. Hawthorn
H258	Native hedgerow	382	Intensive management regime. Hawthorn
H259	Native hedgerow - associated with bank or ditch	191	Intensive management regime. Hawthorn



gerow with trees - associated or ditch gerow with trees gerow with trees gerow with trees gerow with trees	Length (M)  375  161  89  146	Intensive management regime. Hawthorn with standards
gerow with trees  gerow with trees  gerow with trees	161 89 146	Intensive management regime. Hawthorn with standards Intensive management regime. Hawthorn with standards
gerow with trees gerow with trees	89 146	Intensive management regime. Hawthorn with standards
gerow with trees	146	
		Intensive management regime. Hawthorn with standards
gerow with trees - associated		
or ditch	483	Intensive management regime. Hawthorn with standards
gerow	253	Intensive management regime. Hawthorn with elder, blackthorn, dog rose and white bryony, with ash standards.
gerow with trees - associated or ditch	278	Intensive management regime. Blackthorn at northern end and 30m section of hawthorn at southern end.
gerow with trees - associated or ditch	208	Intensive management regime. Elm hedge, also has hawthorn, ash and semi-mature lime standards.
gerow with trees	322	Intensive management regime. Hawthorn.
y valuable line of trees	269	Mature treeline with continuous canopy. Oak.
	53	Intensive management regime. Hawthorn
	gerow with trees  y valuable line of trees	gerow with trees 322  y valuable line of trees 269



Hedge reference	Hedge type	Length (M)	Description
H271	Native hedgerow with trees	326	Intensive management regime. Hawthorn
H272	Native hedgerow with trees	348	Intensive management regime. Hawthorn hedge with elder
H273	Native hedgerow	138	Intensive management regime. Hawthorn
H274	Native hedgerow with trees	452	Intensive management regime. Hawthorn with standards.
H275	Native hedgerow	584	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn.
H277	Native hedgerow with trees	417	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with standards.
H278	Native hedgerow with trees	222	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with standards.
H279	Line of trees	56	Treeline with gaps in canopy. Oak and ash dominated.
H280	Native hedgerow with trees	238	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with standards.
H281	Native hedgerow with trees	158	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with standards.



Hedge reference	Hedge type	Length (M)	Description
H282	Native hedgerow	291	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn.
H283	Native hedgerow with trees	168	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with standards.
H284	Native hedgerow	161	Intensive management regime. Hawthorn.
H285	Native hedgerow with trees	111	Tall with formation of individual plants and gaps in base. Hawthorn and blackthorn with standards.
H286	Line of trees	123	Treeline with gaps in canopy. Oak and ash dominated.
H287	Native hedgerow	198	Intensive management regime. Hawthorn.