

Steeple Renewables Project
Appendix 7.3: Habitat report

Issuing office

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Client	Renewable Energy Systems Ltd
Project	Steeple Renewables Project
Version	FINAL
Project number	P22-761

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Approved for issue to client	Jim Gillespie	Director	22 August 2024
Issued to client	Emily McVean	Senior Ecologist	22 August 2024
Updated	Emily McVean	Senior Ecologist	14 November 2024
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1 Introduction

1.1 This report is a technical appendix to accompany the Preliminary Environmental Information Report (PEIR) Chapter 7: Ecology and Biodiversity and includes the following information:

- Methods.
- Results including relevant Figures, and summary interpretation.

1.2 For ease of reference the following will be terms referred to within this report to define areas within the Site:

- Proposed Solar Areas: areas within the Site which have been provisionally identified for locating the solar panels, battery storage and other associated infrastructure.
- Biodiversity Mitigation Areas (Eastern and Western): areas of the Site that would not be used for development, and provisionally identified for use as biodiversity mitigation and enhancement.
- The Site: collectively including the Proposed Solar Areas and Biodiversity Mitigation Areas

2 Methods

Desk study

- 2.1 The Multi-Agency Geographic Information for the Countryside database (MAGiC) (Defra, 2024) was accessed on 18 March 2024 to identify areas listed on the priority habitat inventory, Ancient Semi-Natural Woodlands (ASNWs), and Planted Ancient Woodland Sites (PAWS) within 2 km of the Site boundary. In addition, the desk study included a review of freely available on-line aerial photographs and maps (Bing Maps, 2024).
- 2.2 Other sources such as the Nottinghamshire Local Biodiversity Action Plan (LBAP) have also been reviewed to identify habitats of local importance (Nottinghamshire Biodiversity Action Group, 2020). A data search for records of notable species, including plants, within 2 km of the Site was requested from Nottinghamshire Biological and Geological Records Centre (NBGRC) and Lincolnshire Environmental Records Centre (LERC) in March 2024. These records have been reviewed and references where relevant.

Field survey

Preliminary Habitat Survey

- 2.3 The Site was walked over on 29 and 31 January, and the 12, 13, and 14 February 2024 to identify and map preliminary habitat types or features and list dominant and notable plant species present. Detailed botanical survey was not undertaken at this time (targeted botanical surveys were instead undertaken during summer, when plants are more likely to be visible, further details are provided below).
- 2.4 The habitat survey was undertaken with reference to UK Habitat Classification system (UKHab Ltd, 2023) and adapted to include habitat types used for biodiversity assessments (as defined in Natural England, 2024a). The habitats mapped are shown on Figures 7.3.1 to 7.3.5.
- 2.5 The Site was also searched for signs of invasive non-native plants such as Japanese knotweed *Reynoutria japonica* and Himalayan balsam *Impatiens glandulifera*.

Grassland Survey

- 2.6 Botanical survey was undertaken of grassland and margin habitats on 16 and 21 May 2024, and between 16 and 19; and 23 and 25 July 2024. Weather was clear and dry except for 16 May, 16 and 23 July, where intermittent rain was encountered.
- 2.7 Quadrat samples (1 m²) were collected to represent plots of grassland and marginal habitats across the Site. A total of 106 quadrat samples were taken. The vascular plant species that were present within each quadrat were identified to species level (based on vegetative characters where appropriate), and an abundance scale¹ of cover of plant species within each quadrat was recorded along with the percentage of bare ground, cover of mosses, and the sward height. The information collected during the survey was used to establish the baseline habitat type and condition.

Arable Field Margin Classification

- 2.8 Many of the cropland fields are bordered by grassy margins. 'Arable field margins' are a priority habitat in line with Sections 40 and 41 of the Natural Environment and Rural Communities Act (2006). Based on definitions provided in Biodiversity Reporting and Information Group (2011) and UKHab Ltd (2023) a grassy margin has been classed as an 'arable field margin' (and thus a priority habitat) if it meets all of these three criteria:

¹ With cover of plants being translated to the following scale:

91-100% = **10** ... 76-90% = **9** ... 51-75% = **8** ... 34-50% = **7** ... 26-33% = **6** ... 11-25% = **5** ... 4-10% = **4** ... <4% (many individuals) = **3** ... <4% (several individuals) = **2** ... <4% (few individuals) = **1**

- The margin is more than 2 m wide (typically no more than 12 m wide, and does not occupy the entire field).
- The margin is adjacent to a field that is in an arable crop rotation.
- The margin is managed specifically to provide benefits for wildlife.

2.9 The first two criteria have been determined from the habitat survey. The third criterion has been determined with reference to active agri-environment schemes covering the land (as published by Defra, 2024). Liaison with the farm tenants has been undertaken where possible to confirm the status of the field margins that fall within agri-environment agreements. If a margin is under an active agreement, it has been assumed to be managed to provide benefits to wildlife and thus meet the third criteria.

2.10 Each of the margins that meet these three criteria will be placed into one of the subcategories described in UKHab Ltd (2023) based on botanical survey information.

2.11 Grassy margins that do not meet the criteria above have been classed as a grassland broad habitat type (e.g. modified grassland or other neutral grassland, based on botanical survey information).

Hedgerow Survey

2.12 A preliminary assessment of hedgerows has been undertaken based on information collected by the arboricultural surveys and the preliminary habitat surveys. This preliminary assessment involved mapping the length of hedgerows and lines of trees according to the UKHab definitions² (UKHab Ltd, 2023). The habitat survey data collected by BSG Ecology in April 2024 were referenced to determine whether a dry ditch or bank was present (NB: if a wet ditch was present, this was mapped as a separate ditch feature rather than as a component of the hedgerow, in accordance with the latest guidelines for assessing biodiversity value (Natural England, 2024b).

2.13 All hedgerows that the arboricultural surveys identified as having five species or more along their entire length were surveyed by an ecologist to determine if they were species-rich or 'important', as detailed below. This is because the arboricultural survey produced counts of woody species for the entire length of the hedgerow, whereas species richness, in UKHab classifications, is determined by the average number of woody species per 30 m sample section only.

2.14 Assessment of 51 hedgerows, covering 15.5 km of the total 69 km length, was undertaken to inform the habitat survey (see hedgerow reference numbers shown in Appendix 7.3.3 of this report with reference to Figure 7.3.4). Hedgerow surveys were undertaken with reference to the Hedgerow Survey Handbook guidance (Defra, 2007) to determine whether hedgerows may meet the Wildlife and Landscape Criteria defined in The Hedgerow Regulations (1997). The results of this assessment will be provided within the Environmental Statement. Further information was collected to determine condition according to the Statutory Biodiversity Metric. A 30 m representative sample of hedgerow was surveyed for each 100 m length. Where a longer length of hedgerow was present, the number of 30 m samples surveyed was increased to ensure that a sample was taken for every 100 m of hedgerow.

2.15 Hedgerows that were not considered to have potential to be species-rich based on the arboricultural surveys (i.e. those that had fewer than five species noted across the entire length) have been assessed based on the arboricultural data to determine their condition. Refer to the consideration of limitations section below for further information.

Other habitat survey

2.16 Pond condition was assessed in tandem with the great crested newt habitat suitability assessments between mid-April and June 2024 (refer to Appendix 7.10: Great crested newt report). This excludes Littleborough Lagoon in the eastern biodiversity mitigation area, which have not yet been subject to

² The hedgerow lengths mapped for the arboricultural assessment and the ecological assessment may differ due to the different habitat classifications/definitions used. The UKHab definition of these features allows for gaps to be mapped as part of the hedgerow.

lake condition assessment. Reporting of the pond and lake condition is underway and will be reported in full within the ES; it is currently assumed that waterbodies are in moderate condition for the purpose of this PEIR.

- 2.17 Ditch condition assessments were completed in April 2024 in tandem with the water vole/otter surveys (refer to Appendix 7.9: Otter and water vole report). The ditches were assessed in line with criteria outlined in Natural England (2024a).
- 2.18 The condition of all other habitats (such as scrub, woodlands, urban habitats) was assessed in May 2024 with reference to criteria outlined in Natural England (2024a).

Personnel

- 2.19 The initial habitat surveys were undertaken by ecologists Daniel Foster MCIEEM, Emily McVean MCIEEM and Emma Bruce ACIEEM throughout January to July 2024. Daniel, Emily and Emma have 19, 12 and 8 years of experience in environmental assessment respectively. Habitat survey results coordinated and reviewed by Emily, who holds a Level 4 Field Identification Skills Certificate (FISC) certificate³, indicating professional standards of botanical identification skills.
- 2.20 Further condition assessments of ponds, hedgerows and grasslands were undertaken by Sidney Vickress, Fiona Shuttle ACIEEM, Emma Bruce ACIEEM and Emily McVean MCIEEM.

Consideration of potential limitations

- 2.21 Further survey work is ongoing and will be reported within the Environmental Statement. This report provides the preliminary findings.
- 2.22 The Figures that support this report have used a previous iteration of the Site boundary which has now been superseded as shown by Figure 1.1 Site Location Plan in the PEIR. The differences between the two boundaries are reasonably minor given the scale of the Site. It is the intention that this habitat report will be updated as the Proposed Development evolves using the updated boundary.
- 2.23 Walkover access was not possible within the demolition zones at West Burton Power Station in the north of the Site. However, the demolition zones amounted to approximately 0.2 ha and were visible to the surveyor from the adjacent land (controlled by National grid and EDF) on 23 July 2024. The restricted walkover access is not considered to pose a significant constraint to the preliminary findings. The remainder of the Site was fully accessible.
- 2.24 Some initial habitat surveys were undertaken outside the optimal botanical survey season (typically considered to be May to September). However, further survey has been undertaken during the optimal season in 2024 to verify the habitat classifications, assess the condition of the habitats (for the Biodiversity Net Gain assessment), and verify the presence of invasive non-native plants. Intermittent rain was encountered on two of the seven botanical quadrat survey days. Surveyors made use of weatherproof recording equipment and retrieved botanical samples to analyse under shelter where necessary to ensure that all species were accurately recorded.
- 2.25 The majority of trees on Site are considered to be a secondary feature of other habitats (such as hedgerows with trees, woodland, orchard) and therefore have not been subject to condition assessment as 'individual trees' and have not been included in the habitat maps as individual trees. However, photographs and measurements of all hedgerow trees that have stem diameter >7.5 cm at breast height have been collated as part of ground level tree assessments (refer to Appendix 7.7: Bat report) so that trees may be assessed retrospectively, with reference to arboricultural survey data, if needed⁴.

³ Botanical Society of British Isles - Field Identification Skills Certificate.

⁴ Guidelines require trees within hedgerows to be considered as 'individual trees' if they will be removed (see page 54 of Natural England (2024b)).

- 2.26 Some habitats have not yet been assessed for their ecological condition according to the Statutory Biodiversity Metric (Natural England, 2024a), and have been assumed to be in moderate condition at the time of writing unless stated otherwise (this includes 'other river' habitat, ponds lakes, grasslands). The Environmental Statement will include a complete assessment of all habits.
- 2.27 The condition of hedgerows that are not species-rich has been assessed based on information produced from the arboricultural surveys. This allowed 6 of the 10 condition criteria specified in Natural England (2024b) to be determined. The remaining criteria that could not be determined from the arboricultural survey include:
- Criterion B1 on basal gaps (spot sampling the hedgerows across the Site shows that hedgerows generally pass this criteria - it has been assumed that the hedgerows pass this criteria unless surveyors have noted evidence to the contrary);
 - Criterion C1 on undisturbed perennial vegetation (however, habitat survey data has been collected on the sizes of field margins adjacent to hedgerows to determine whether this criterion is met);
 - Criterion C2 on nutrient enriched vegetation cover (information has been extrapolated from the survey of hedgerows that were subject to detailed survey to conclude that although indicators of nutrient enrichment were present in the herb layers, these were rarely sufficient to cause failure under this criterion, so it has been anticipated that hedgerows pass this criterion unless evidence has been noted to the contrary); and
 - Criterion D2 on damaging activities (due to the rural nature of the Site and the current management regime, no hedgerows were observed have damage sufficient to compromise this criterion, and all hedgerows meet this criterion).
- 2.28 Overall, no significant limitation to the characterisation and assessment of habitats has been identified in the context of informing the Preliminary Environmental Information Report (PEIR).

3 Results and summary interpretation

Desk study

Priority habitats

3.1 Several priority habitats that are on the Priority Habitat Inventory may be present within the Site including:

- Traditional orchard – one area of traditional orchard is listed on the Natural England Priority Habitat Inventory as within the Site boundary and its presence has been verified via the field survey (Figure 7.3.2; Photograph 7.3.7).
- Deciduous woodland – one area of deciduous woodland is listed within the Natural England Priority Habitat Inventory as falling within the Site boundary and its presence has been verified (Figure 7.3.2; Photograph 7.3.8).
- Coastal and Floodplain Grazing Marsh (CFGM) – three areas are listed as falling within the Site boundary. These are not considered to be accurate and were found to be cropland / arable fields at the time of the habitat walkover (January 2024). Alternative areas of this habitat type have been identified via field survey (see below).

3.2 In addition, the following priority habitats were recorded during the habitat walkover (also shown on Figure 7.3.2), but do not appear on the Natural England Priority Habitat Inventory. These include:

- Hedgerows – all hedgerows on Site are formed of native species and are considered to meet the criteria for priority habitat, as set out in the priority habitat definitions (BRIG, 2011).
- CFGM has been recorded adjacent to the River Trent. This area is known to be periodically inundated and is used for pasture (Photograph 7.3.3).
- Deciduous woodland – a further belt of trees is present along an unnamed watercourse in the southwest of the Site, this is considered to be deciduous woodland via the field survey (Photograph 7.3.8).
- Arable field margins – arable field margins are present as described above in paragraphs 1.8–1.11.

3.3 Further survey information will also be collected to determine the extent of the following priority habitat types within the Site:

- Ponds and standing waters - further information is required to ascertain whether the ponds/standing waters meet any priority habitat criteria.

Ancient woodland

3.4 There are no registered ASNWs, PAWS; or ancient wood pastures within the Site (inferred from the desk study and field survey). The closest ancient woodland is 1.3 km to the east of the Site (Burton Wood) and no ancient woodlands have direct habitat connectivity to the Site via hedgerows, other semi-natural habitat corridors, or footpaths.

Local Biodiversity Action Plan

3.5 The following habitats that may be on or adjacent to the Site have been identified as Habitats of Conservation Concern in the Nottinghamshire LBAP, for which LBAP Habitat Action Plans have been developed (last updated March 2008):

- | | |
|-----------------------------------------|-----------------------------|
| • Ancient and/or species rich hedgerows | • Ditches |
| • Arable fields | • Eutrophic standing waters |
| • Cereal field margins | • Mesotrophic lakes |
| | • Improved grassland |

- Lowland wet grassland
- Oak-birch woodland
- Reedbed
- Rivers and streams

Notable plant records

- 3.6 The Nottinghamshire Local Wildlife Site (LWS) criteria (Nottinghamshire Local Sites Panel, 2018) allow for any site that supports a Nottinghamshire Rare Plant Register (RPR) species (Wood & Woods, 2021) to be considered for LWS status.
- 3.7 Species recorded on or near the Site in the last 20 years that are on the Nottinghamshire RPR are presented in Appendix 7.3.1. Twenty-one such plants have been recorded within or near the boundaries of the Site in recent years. None are listed on Schedule 8 of The Wildlife and Countryside Act 1981 (as amended), which would protect the plants from intentional picking, uprooting or destruction.
- 3.8 The majority of these plants are either associated with designated sites just outside the Site (West Burton Meadow LWS, Claborough Tunnel SSSI) or are described as being associated with ditch, verge, hedgerow, or water features at the field edges within and adjacent to the Site. Rye brome *Bromus secalinus* is the exception, which has been recorded in cereal crops and has an affinity to this habitat - it is a nationally vulnerable species but not considered to be scarce in Nottinghamshire (i.e. it is 'scattered' throughout the county in arable fields). Records of this species significantly increased in the county in recent years, from being present in 13 monads⁵ in 2013 to 198 monads in 2021 (Wood & Woods, 2013; 2021). Therefore, its presence on Site, which has been verified via field survey, is not considered to be notable as the plant is now scattered across the county and no longer considered scarce.
- 3.9 Notable plant records and field observations are generally restricted to ditch features or field edges or have a location descriptor that confirms they are outside the Site (such as listing the location as Claborough tunnel or the River Trent). The exception is rye brome; local records exist for field edges, but it was also observed amongst the crops during field survey. The cropland areas are likely to be subject to harvesting and cultivation as part of the normal cropping plans, which may cause temporary disturbances to the distribution in the Site.

Invasive non-native plant records

- 3.10 The data search returned records of the following invasive non-native plants within 2 km of the Site: water fern *Azolla filiculoides*, Canadian waterweed *Elodea canadensis*, Nuttall's waterweed *Elodea nuttallii*, New Zealand pigmyweed *Crassula helmsii*, rhododendron *Rhododendron ponticum*, Japanese knotweed *Reynoutria japonica*, giant hogweed *Heracleum mantegazzianum*, and Himalayan balsam *Impatiens glandulifera*. During the field surveys on the Site, Canadian waterweed was observed within Mother Drain in the east of the Site. No other INNS have been noted within the Site to date.

Field survey

Potential irreplaceable habitats

- 3.11 No irreplaceable habitats have been identified on Site. Irreplaceable habitats are defined in The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. This includes veteran and ancient trees.
- 3.12 Mature trees with some veteran features (such as fungal growth, large cavities, deadwood, or broken main stems) were observed within the Site boundary during the preliminary habitat survey. However, these have been assessed by arboricultural specialists and have not been recorded as veteran trees or ancient trees.

⁵ A monad is a 1 km x 1 km grid square

Habitat descriptions

3.13 The type, extent and distribution of habitats within the Site were mapped during the habitat survey work and are shown on Figures 7.3.1 to 7.3.6. Table 7.3.1 presents summaries of the habitats found at the Site.

Table 7.3.1: Summary of the habitats present at the Site

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
Priority Habitats			
Arable Field Margins	The margins of the arable cropland include uncultivated strips of grassland of ca. 2 to 12 m width. Margins are generally dominated by tussocky, coarse grasses. Some of the margins are considered to be managed for the benefit of wildlife and therefore have been classed as the priority habitat.	S41 ⁶ , NPPF ⁷ , Environment Act 2021, Nottinghamshire LBAP	Medium (4)
Coastal and Floodplain Grazing Marsh	An area in the east of the Site, adjacent to the River Trent, was inundated with floodwater in February 2024, but floodwater had receded by March 2024. An artificial levee is within this part of the Site and it is anticipated that floodwater may occasionally extend to this during times of spate. The area is subject to sheep grazing. Localised patches of wetland species are present (such as tufted hair-grass <i>Deschampsia cespitosa</i> and rushes <i>Juncus</i> spp.). The majority of grassland areas are characteristic of modified grassland. A single ditch is present in this area, and a large lake with a slipway and pipework has been created within the last 60 years ⁸ . The area can be considered to meet the definition of CFGM (BRIG, 2011), but it is a poor example of this priority habitat owing to the lack of topological diversity that would result in wet depressions or extensive ditch systems.	S41, NPPF, Environment Act 2021	High (6)
Hedgerows	Following ground truthing of the preliminary assessment, a total of 66 km of hedgerows are assessed to be within the Site ⁹ and likely qualify as priority habitat. The following types of hedgerows have been observed: <ul style="list-style-type: none"> • native hedgerow • native hedgerow associated with a ditch or bank • native hedgerows with trees • native hedgerows with trees associated with a ditch or bank • species-rich native hedgerow • species-rich native hedgerow - associated with bank or ditch • species-rich native hedgerow with trees • species-rich native hedgerow with trees - associated with bank or ditch • line of trees 	S41 NPPF, Environment Act 2021, Hedgerow Regulations 1997	Low to Very High (2-8)

⁶ Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006

⁷ National Planning Policy Framework

⁸ The feature is shown on aerial imagery from 1985 (Google and Image Landsat / Copernicus, 1985), but not shown on OS maps from 1955-1959 (OS, 1969).

⁹ Note that in the Scoping Report the length of hedges was reported as 88 km as opposed to 66 km. This is because at the time of producing the Scoping Report, a larger Site boundary was assessed, and some open ditch features were interpreted as hedgerow features during preliminary mapping before ground truthing was completed.

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	<p>Further assessment is needed to determine whether hedgerows qualify as 'important' under the Hedgerow Regulations 1997.</p> <p>The majority of hedgerows (90%) are assessed as species-poor, particularly those in the centre and east of the Site. Higher distinctiveness hedgerows are present as species-rich hedgerows (with trees and/or associated with a ditch/bank). The hedgerows are typically formed of hawthorn, blackthorn with other native species such as ash, elder and/or field maple. Although trees are present in many of the hedgerows, few are present at intervals of less than 50 m, so are not classed as 'hedgerow with tree' habitat.</p>		
Traditional orchard	<p>A parcel of traditional orchard is shown on the Priority Habitat Inventory within the west of the Site and confirmed via field survey. The orchard includes ca. 40 mature apple <i>Malus</i> spp. and pear <i>Pyrus</i> spp. trees with irregular 8-15 m spacings, and with modified grassland below. The grassland has signs of grazing; poaching damage was evident during the March 2024 survey. The habitat appears to be traditionally managed and trees have features such as rot holes and deadwood (but were not assessed to be ancient or veteran trees).</p>	S41 NPPF, Environment Act 2021,	High (6)
Woodlands (priority and non-priority)	<p>Lowland mixed deciduous woodland is present within the Site and is considered to be a priority habitat. One parcel of lowland mixed deciduous woodland is present in the southeast of the Site ('Fenton Gorse'). Another band of trees ca. 10 m width and 1 km length is present in the southwest of the Site on the banks of an unnamed watercourse. Other woodlands are considered to be plantation and not priority habitat ('broadleaved woodland; other').</p> <p>Woodland is generally formed of copses, 'gorses', and shelter belts. Shelter belt planting has been classed as plantation woodland (which is not considered to qualify as not a priority habitat). Woodlands are generally surrounded by arable land and have signs of being occasionally failed to prevent encroachment into cropland.</p> <p>No ancient woodland is in the Site or within 1 km of the boundary.</p>	S41, NPPF, Environment Act 2021, Nottinghamshire LBAP	Medium – High (4-6)
Eutrophic standing water	<p>Littleborough Lagoon, large waterbody (>35,000 m² area), is present in the east of the Site, adjacent to the River Trent, and may get inundated with floodwater periodically, which is likely to increase nutrient levels. The waterbody requires further assessment to determine whether it is likely to be a priority habitat. It is assessed to have the lake typology of 'high alkalinity lake' based on the Lakes Portal hosted by the UK Centre for Ecology & Hydrology (2024). This may precautionarily be considered equivalent to the priority habitat 'eutrophic standing water'</p>	S41, NPPF, Environment Act 2021	Medium to High (4-6)
Other habitats			
Cropland	<p>The majority of the Site is formed of arable cropland (primarily cereal and non-cereal crops). A small number of fields appeared to be sown with a game cover mix or similar over winter (including mustard species and sunflowers) but had become dominated by ruderal species during the summer surveys. Refer to 'ruderal vegetation and tall forbs'</p>	Nottinghamshire LBAP	Low (2)

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	below. A handful of fields appeared to be sown for productive grasses, and historic aerial imagery indicates that this is done in rotation with cereal crops, and therefore these have been classed as temporary grass and clover ley.		
Modified grassland	Some of the fields in the agricultural areas appear to be managed as pasture (Photograph 7.3.14). The habitat is modified grassland, based on the diversity and species composition. Further botanical survey information is provided in Appendix 7.3.2 (refer to quadrats A11 to A14, C07 to C10, E18 to E25, F20 to F22, G4 to G6 and H1 to H3).	Nottinghamshire LBAP	Low (2)
Other neutral grassland	Some areas of species-rich grassland may be present, such as along trackways, verges, and in field corners (Photograph 7.3.16). These areas generally include 9 species or more per square metre. Further botanical survey information is provided in Appendix 7.3.2. The grasslands include common and widespread species.	N/A	Medium (4)
Grassy margins (modified grassland or other neutral grassland)	Grassy margins that are not considered to qualify as the priority habitat (arable field margin) are present around the majority of the fields on Site. These margins vary in width, generally between 2 m and 6 m, and some are used as access tracks for agricultural machinery. These areas have been classed as either modified grassland or other neutral grassland based on the species diversity and composition (see above).	Nottinghamshire LBAP	Low (2)
Ditches and culverts	Ditches are present across the Site. Preliminary assessments indicate that 13 km of wet ditches are within the Site. It is anticipated that some of these are seasonally wet and are likely to dry over summer. Ditches are generally steep-sided (ca. 45-70° V-cut banks), with water depths of less than 1m. A proportion of the ditches are large field drains, which due to their size are considered as 'other river' habitat. The ditches enter culverts across the Site, generally to facilitate roads and farm tracks.	Nottinghamshire LBAP	Low – Medium (2-4)
Other Rivers	The large land drains, i.e. the Catchwater drain and Mother Drain, are more than 5 m wide (from banktop to banktop) and do not meet the definition of a ditch (Natural England, 2024b) so have been classed as 'other river' habitat. Two other rivers are relevant to the Site; these are the Oswald Beck and an unnamed watercourse. These are small streams that had low water depths (ca 10-30 cm during April 2024). The rivers are not considered to qualify as priority habitat based on the field observations and have not been mapped as priority habitat by Natural England (2017a; 2017b). The condition of the rivers will be assessed and reported in the Environmental Statement.	Nottinghamshire LBAP	High (6)
Ponds (non-priority)	Two small waterbodies are present within the boundary, which appear to be excavated depressions in the corners of arable fields. The ponds have little to no aquatic vegetation and are shaded by adjacent scrub and trees with turbid water and are not considered to be of high ecological quality (refer to descriptions of Ponds 1 and 3 in Appendix 7.10: Great crested newt report). The ponds would be highly	N/A	Medium (4)

Habitat	Description	Relevant ecological legislation and policy	Statutory Biodiversity Metric distinctiveness (and score)
	unlikely to be classified in the top PSYM ¹⁰ category ('high') for ecological quality (i.e. having a PSYM score $\geq 75\%$) given their setting in an intensive arable landscape. The ponds are not known, or considered likely, to support notable species that would cause them to meet the criteria of priority habitat ponds due to having little to no aquatic vegetation and having high shading levels. The ponds are typical of agricultural habitats and are not considered to be priority habitat.		
Scrub	Pockets of scrub are present across the Site, generally in the corners of fields or adjacent to ditches. Scrub is generally formed of blackthorn, bramble, or a mixture woody native species.	N/A	Medium (4)
Line of trees	One line of semi-mature sycamore trees is present within the south east of the Site, along 57 m of a ditch, with no scrub layer. A second line of trees is present towards the centre of the Site, along a ditch and public bridleway.	N/A	Low (2)
Individual trees	Within the part of the power station that comprises part of the Site, there are 10 individual trees that form part of the landscaped estate. Trees are generally in good condition (one in poor condition) in include species such as ash, sycamore, whitebeam, cherry, alder, and two hybrid black polar trees <i>Populus x canadensis</i> .	N/A	Medium (4)
Ruderal vegetation and tall forbs	Ruderal vegetation and tall forbs are generally in field corners or under pylons where cultivation and mowing is less frequent. Two parcels of this land have been observed where cultivation of an arable field has not taken place. The fields were subject to quadrat survey (refer to Appendix 7.3.2 quadrat references F08, F09, F12, F13 and F14) and identified high proportions of bare ground and ruderal forbs such as broad-leaved dock <i>Rumex obtusifolius</i> , creeping thistle <i>Cirsium arvense</i> , and marsh willowherb <i>Epilobium palustre</i> ,	N/A	Low (2)
Urban habitats	The following urban habitats have been recorded on Site: Bare ground – such as recently re-profiled areas of ground within agricultural land Developed land; sealed surface – such as surfaced roads or buildings. Four agricultural buildings have been recorded within the farmland areas of the Site. A further four buildings are within the part of the Site that intersects West Burton Power Station. Further description of buildings, with respect to suitability for fauna, are provided in Appendix 7.7: Bat report.	N/A	Very low – Low (0-2)

Notable plants and LWS) interests

- 3.14 Rye-brome is listed on the Nottinghamshire Rare Plant Register and was identified on Site. Due to the increased prevalence across the county and lowland areas of Britain (Wood & Wood, 2021), its presence is not considered to be of particular note.
- 3.15 Spiny restharrow *Ononis spinosa* was observed on Site on the verges of a bridleway within the Blue Stocking Lane, Claborough LWS. It is listed as scarce in Nottinghamshire Rare Plant Register, and

¹⁰ PYSM (Predictive SYstem for Multmetrics) is a method for assessing the biological quality of still waters in England and Wales.

near threatened in England (Wood & Wood, 2021). It was most prevalent in the more open verges of the LWS. The LWS were found to be species-rich (average of 12.67 species per m²). Further description is provided in Appendix 7.2: Designated Sites.

- 3.16 A plant that is rare in the British Isles (Stace, 2019), but not listed within the latest edition of the Nottinghamshire RPR, was noted within the ditch that forms the Thornhill Drain, Littleborough LWS in April 2024 (within the eastern biodiversity mitigation area, at grid reference SK814828). It was identified as Linton's pondweed *Potamogeton friesii x crispus* = *P. x lintonii*, which was listed in the first and second editions of the RPR; and NBGRC records indicate that it was recorded west of the Site, in the Chesterfield Canal, in the 1980s. The plant was not observed during June 2024 aquatic invertebrate surveys that were undertaken upstream and downstream of the recorded location.

Summary of key points

- 3.17 The predominant habitat on the Site is arable cropland, formed of large open fields bounded by native hedgerows, field margins, or drainage ditches. A handful of fields appear to be managed as permanent pasture for sheep or cattle (near the River Trent, in the north of the Site, and in the southwest of the Site) or were grassland ley at the time of the surveys. Wet ditches are more prevalent in the east of the Site, closer to the River Trent, and the large land drains (such as the Catchwater Drain and Mother Drain) are considered to be river/stream habitat based on their width, water flow and their function as tributaries to the River Trent. Two further streams intersect the Site: the Oswald Beck in the north of the Site and an unnamed stream in the south-west of the Site. The River Trent is more than 10 m outside the Site boundary. An area of the Site intersects the West Burton Power Station, which is currently being decommissioned. The power station is currently developed land, grassland (modified grassland/road verges and unmown other neutral grassland plots) with mature and semi-mature individual trees.
- 3.18 Mature trees are present within the hedgerows at sparse intervals, and woodland cover is generally low, covering less than 0.07% of the Site. The woodland generally comprises shelter-belt plantations, and one copse (Fenton Gorse) and belt of trees along a stream that are both considered to be the priority habitat lowland deciduous woodland.
- 3.19 As well as the lowland deciduous woodland, other priority habitats across the Site include: hedgerows, arable field margins, traditional orchard, and coastal and floodplain grazing marsh – though the latter is considered to be a poor example of its habitat based on the lack of wet depressions and extensive ditch habitats. Part of this area includes the Littleborough Lagoon, which is considered to be the priority habitat 'eutrophic standing water'.
- 3.20 The traditional orchard in the north of the Site includes ca. 40 mature apple *Malus* spp. and pear *Pyrus* spp. trees enclosed by hedgerows; the grassland below is subject to sheep grazing. Priority habitat arable field margins comprise tussocky grasses, and have been confirmed as being under active management for wildlife by the tenants.
- 3.21 Approximately 69 km of hedgerows are present across the Site. Over 80% of hedgerows are assessed as species-poor, particularly those in the centre and east of the Site. Higher distinctiveness hedgerows are present as species-rich hedgerows, particularly in the northwest of the Site, or as hedgerows with trees or associated with a ditch/bank, which were scattered across the Site. The hedgerows are typically formed of hawthorn and blackthorn, with other native species such as ash, elder and/or field maple. The majority of hedgerows appear to be cut annually in late winter. Further analysis of field data is to be undertaken to determine whether hedgerows may qualify as 'important' under the Wildlife and Landscape Criteria of the Hedgerow Regulations (further hedgerow may be identified as important under the heritage criteria of the regulations but this is not considered as part of the ecological assessments). One line of semi-mature sycamore trees is present within the Site, along 57 m of a ditch, with no scrub layer.
- 3.22 Two small ponds and one lake are present within the Site. The ponds are present as wet depressions in field corners, they are overgrown with trees or scrub and are not considered to be of high ecological quality and are not known to support protected species. Therefore, the ponds are not considered to qualify as priority habitat as they are unlikely to support notable species or exceptional assemblages of species due to the lack of aquatic vegetation, overshadowing, and visible turbidity. Littleborough

Lagoon is over 35,000 m² of open water and cited as a LWS (refer to Appendix 7.2: Designated Sites). Observations throughout winter indicate that the lagoon is periodically inundated with floodwater from the River Trent.

- 3.23 Other habitats on Site include: developed land and bare ground such as roads/tracks, farm yards, and buildings; and small pockets of native scrub, ruderal vegetation and tall forbs, which are generally in field corners or under pylons where cultivation and mowing is less frequent.
- 3.24 Notable plant species are generally in offsite designated sites or are confined to field edges and ditches. The invasive non-native species Canadian waterweed was observed within the Mother Drain in the Eastern Biodiversity Mitigation Area.
- 3.25 Overall, the habitats on Site are typical of an agricultural landscape and are representative of the local area. Key habitats of ecological value include the priority habitats, which are mainly confined to field boundaries or biodiversity mitigation areas.

4 References

- Barton Hyett Associates (2024) *Arboricultural Survey Report Steeple Renewables Project*. May 2024.
- Biodiversity Reporting and Information Group [BRIG] (2011) *UK Biodiversity Action Plan; Priority Habitat Descriptions*. Peterborough: JNCC.
- Defra (2007) *Hedgerow Survey Handbook 2nd Edition. A standard procedure for local surveys in the UK*. London: Defra.
- Defra (2024) *MAGiC map application*. Available at: <https://magic.defra.gov.uk/MagicMap.aspx> (Accessed: 09 August 2024).
- Google and Image Landsat/ Copernicus (1985) *Map Data, dated 31 December 1985 for location 53.33900, -0.759510*. Available at: <https://earth.google.com/web/search/53.33900,+,-0.759510> (Accessed: 18 November 2024).
- Natural England (2017a) *Priority River Habitat - Headwater Areas (England)* [dataset]. Available at: <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::priority-river-habitat-headwater-areas-england/about> (Accessed: 11 July 2024).
- Natural England (2017b) *Priority River Habitat - Rivers (England)* [dataset]. Available at: <https://naturalengland-defra.opendata.arcgis.com/datasets/Defra::priority-river-habitat-rivers-england/about> (Accessed: 11 July 2024).
- Natural England (2024a) *Statutory Biodiversity Metric - Technical Annex 1- Condition Assessment Sheets and Methodology*. Version 1.0.2. Available at: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides> (Accessed: 18 November 2024).
- Natural England (2024b) *Statutory Biodiversity Metric – User Guide*. Last updated: July 2024. Available at: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides> (Accessed: 18 November 2024).
- Natural England (2024c) *Statutory Biodiversity Metric – Calculator Tool*. Version 1.0.3. Available at: <https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides> (Accessed: 18 November 2024).
- UKHab Ltd (2023) *The UK Habitat Classification: Habitat Definitions Version 2.0*. Available at: <https://ukhab.org/> (Accessed: 18 November 2024).
- Nottinghamshire Biodiversity Action Group (2020) *Nottinghamshire's LBAP*. Available at: <https://nottsbag.org.uk/lbap/> (Accessed: 09 July 2024).
- Nottinghamshire Local Sites Panel (2018) *Nottinghamshire LWS Handbook: Guidelines for the selection of Local Wildlife Sites in Nottinghamshire Part 2A – Local Wildlife Sites selection criteria: species*. 2nd Edition, July 2028.
- OS [Ordnance Survey of Great Britain] (1969) *Sheet 104 - Gainsborough - B/* Edition*. One-inch to the mile maps of Great Britain. Seventh Series, Revised: 1960 to 1968, Reprinted: 1969. Reproduced with the permission of the National Library of Scotland.
- Stace, C. (2019) *New Flora of the British Isles*. Fourth Edition. C & M Floristics.
- Stroh, P.A., Humphrey, T. A, Burkmar, R.J., Pescott, O.L., Roy, D.B, & Walker, K.J (2023) *BSBI Online Plant Atlas 2020*. Available at: <https://plantatlas2020.org/> (Accessed: 31 July 2024).

UK Centre for Ecology & Hydrology (2024) *UK Lakes Portal: unnamed Water body ID 32698*. Available at: <https://eip.ceh.ac.uk/apps/lakes/detail.html?wbid=32698> (Accessed: 13 November 2024).

Wood, D. & Woods, M. (2013) Nottinghamshire Vice County 56 Rare Plant Register 1st edition. Nottingham: Nottingham City Council.

Wood, D. & Woods, M. (2021) Nottinghamshire Vice County 56 Rare Plant Register 3rd edition. Nottingham: Nottingham City Council.

6 Photographs

(overleaf)



Photograph 7.3.1: Example Arable field margin



Photograph 7.3.2: Example grassy margin (modified grassland)



Photograph 7.3.3: Coastal and floodplain grazing marsh in the east of the Site



Photograph 7.3.4: Example native hedgerow (reference BH11)



Photograph 7.3.5: Example native species-rich hedgerow (reference EH66)



Photograph 7.3.6: Example native species-rich hedgerow with trees (reference AH9)



Photograph 7.3.7: Traditional orchard in the northwest of the Site



Photograph 7.3.8: Lowland mixed deciduous woodland (Fenton Gorse) in the southeast of the Site



Photograph 7.3.9: Band of lowland mixed deciduous woodland along unnamed watercourse in the southwest of the Site



Photograph 7.3.10: Other broadleaved woodland example (plantation) in the centre of the Site



Photograph 7.3.11: Eutrophic or Mesotrophic standing water (Littleborough Lagoon) in the east of the Site



Photograph 7.3.12: Example cropland



Photograph 7.3.13: Example grassy ley in the southwest of the Site



Photograph 7.3.14: Example of modified grassland



Photograph 7.3.15: Example of other neutral grassland



Photograph 7.3.16: Example wet ditch



Photograph 7.3.17: Example of large drains, Catchwater Drain (other rivers and streams)



Photograph 7.3.18: Example of scrub habitat in the northwest of the Site



Photograph 7.3.19: Line of trees



Photograph 7.3.20: Example individual trees in the north of the Site (West Burton Power Station)



Photograph 7.3.21: Ruderal vegetation and tall forbs in the east of the Site



Photograph 7.3.22: Example of urban habitats in the north of the Site (West Burton Power Station)

7 Appendices

(overleaf)

Appendix 7.3.1: Notable plant records

Notable plant records from the last 20 years

Grid reference	Common name	Taxonomic name	Date	Status	Location notes	Recorded on Site during 2024 surveys
SK8084	Common Cudweed	<i>Filago germanica</i>	29/07/2019	Near Threatened (GB)	Sturton le Steeple	No
SK7582	Corn Mint	<i>Mentha arvensis</i>	18/06/2011	Near Threatened (Eng.)	Clarborough	No
SK7584	Field Scabious	<i>Knautia arvensis</i>	13/07/2019	Near Threatened (Eng.)	South Wheatley track verge	No
SK789851	Green-winged Orchid	<i>Anacamptis morio</i>	09/05/2014	Near Threatened (GB)	West Burton Meadow	No
SK787851	Green-winged Orchid	<i>Anacamptis morio</i>	09/05/2015	Near Threatened (GB)	West Burton Meadow widespread & frequent, unimproved grassland - NWT reserve. Also recorded 1997, 2004	No
SK785850	Green-winged Orchid	<i>Anacamptis morio</i>	06/06/2019	Near Threatened (GB)	West Burton Meadow at least 10 spikes at SK7854785004 & at least 10 spikes at SK7869585084	No
SK803830	Hedge Bindweed species	<i>Calystegia sepium</i> subsp. <i>roseata</i>	11/08/2008	County Rare	Fenton Lane Drain	No
SK796830	Hybrid Watercress	<i>Nasturtium x sterile</i>	09/08/2016	County Scarce	Fenton Lane Drain Locally dominant along a section of shallow roadside drain	No
SK7582	Large-leaved Lime	<i>Tilia platyphyllos</i>	18/06/2011	Nationally Scarce	Clarborough in roadside hedgerow - same height as shrubs on either side	No
SK8083	Large-leaved Lime	<i>Tilia platyphyllos</i>	09/08/2016	Nationally Scarce	Littleborough	No
SK815828	Opposite-leaved Pondweed	<i>Groenlandia densa</i>	28/08/2013	Vulnerable (GB)	Thornhill Lane drain, Littleborough (East)	No
SK812830	Opposite-leaved Pondweed	<i>Groenlandia densa</i>	28/08/2013	Vulnerable (GB)	Thornhill Lane drain, Littleborough (East)	No
SK7885	Quaking-grass	<i>Briza media</i>	06/06/2019	Near Threatened (Eng.)	West Burton Meadow	No
SK826831	Round-fruited Rush	<i>Juncus compressus</i>	16/08/2012	Near Threatened (GB)	Littleborough Ballast Pit	Yes
SK778829	Rye Brome	<i>Bromus secalinus</i>	26/07/2019	Vulnerable (GB)	Sturton le Steeple Field locally abundant in cereal crop	Yes
SK772831	Rye Brome	<i>Bromus secalinus</i>	26/07/2019	Vulnerable (GB)	Sturton le Steeple Field locally abundant in cereal crop	Yes
SK777839	Rye Brome	<i>Bromus secalinus</i>	26/07/2019	Vulnerable (GB)	Sturton le Steeple Field LA on edge of rape field	Yes
SK786830	Rye Brome	<i>Bromus secalinus</i>	08/07/2016	Vulnerable (GB)	Sturton le Steeple Field scattered plants in rape field	Yes
SK796826	Rye Brome	<i>Bromus secalinus</i>	09/08/2016	Vulnerable (GB)	North Leverton Field locally abundant on arable margin	Yes
SK7582	Sanicle	<i>Sanicula europaea</i>	10/08/2008	Near Threatened (Eng.)	Clarborough Tunnel	No
SK7582	Sanicle	<i>Sanicula europaea</i>	18/06/2011	Near Threatened (Eng.)	Clarborough Tunnel	No
SK828833	Short-leaved Water-starwort	<i>Callitriche truncata</i>	04/09/2010	Nationally Scarce	River Trent, Littleborough	No
SK8283	Short-leaved Water-starwort	<i>Callitriche truncata</i>	16/08/2012	Nationally Scarce	Littleborough Borrow Pit	No
SK824846	Short-leaved Water-starwort	<i>Callitriche truncata</i>	16/08/2012	Nationally Scarce	Out Ings pools by tidal Trent, rare, also present in 1999	No
SK802836	Stingless Nettle	<i>Urtica dioica</i> subsp. <i>galeopsifolia</i>	03/07/2019	County Scarce	Littleborough Road, Sturton le Steeple Rare, roadside ditch on N. side.	No
SK827832	Tasteless Water-pepper	<i>Persicaria mitis</i>	04/09/2010	Vulnerable (Eng.)	River Trent, Littleborough	No
SK824845	Tasteless Water-pepper	<i>Persicaria mitis</i>	04/09/2010	Vulnerable (Eng.)	River Trent, Sturton le Steeple	No
SK7582	Wood-sorrel	<i>Oxalis acetosella</i>	18/06/2011	Near Threatened (Eng.)	Clarborough	No
SK7682	Wood-sorrel	<i>Oxalis acetosella</i>	18/06/2011	Near Threatened (Eng.)	Clarborough	No

Appendix 7.3.2: Botanical survey results

7.1 The following tables provide the botanical species lists associated with each of the quadrat samples. The tables have been provided in order of the survey date. The weather conditions on each survey date are presented ahead of the related quadrat survey results.

7.2 The abundance (percentage cover) of each species has been estimated by use of the following notations:

- 91–100% = 10
- 76–90% = 9
- 51–75% = 8
- 34–50% = 7
- 26–33% = 6
- 11–25% = 5
- 4–10% = 4
- 4% (many individuals) = 3
- <4% (several individuals) = 2
- <4% (few individuals) = 1

Date: 16/05/2024

Weather: intermittent rain, overcast (8 oktas), 18°C, light breeze

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)							
		G1	G2	G3	G4	G5	G6	G7	G8
Broad-leaved dock	<i>Rumex obtusifolius</i>					1			1
Bulbous buttercup	<i>Ranunculus bulbosus</i>								2
Cock's-foot	<i>Dactylis glomerata</i>	4	5						
Common nettle	<i>Urtica dioica</i>							8	
Common vetch	<i>Vicia sativa subsp. segetalis</i>		1						
Cow parsley	<i>Anthriscus sylvestris</i>							1	
Creeping bent	<i>Agrostis stolonifera</i>	8							
Creeping buttercup	<i>Ranunculus repens</i>				7		5		
Creeping thistle	<i>Cirsium arvense</i>		2						
Dandelion	<i>Taraxacum agg.</i>		2				6		4
False oat-grass	<i>Arrhenatherum elatius</i>		9						
Hogweed	<i>Heracleum sphondylium</i>	1						1	
Horsetail species	<i>Equisetum sp.</i>	1							
Loose silky bent	<i>Apera spica-venti</i>					10	6		
Meadow foxtail	<i>Alopecurus pratensis</i>						5	7	9
Nipplewort	<i>Lapsana communis</i>			1					
Perennial rye-grass	<i>Lolium perenne</i>	6							
Rough meadow-grass	<i>Poa trivialis</i>			7					
Smooth meadow-grass	<i>Poa pratensis</i>	4			7	5	4		4
Soft-brome	<i>Bromus hordeaceus</i>	1							3
Yorkshire-fog	<i>Holcus lanatus</i>	6		5	6		6		
Total species per m²		8	5	3	3	3	6	4	6
% Moss Cover		0	0	0	0	0	0	0	0
% Bare Ground		0	0	40	0	0	0	0	0
Average Sward Height (cm)		20	40	10	20	30	30	80	60

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)							
		F18	F19	E17	E18	E19	E20	E21	E22
Black bent	<i>Agrostis gigantea</i>				2				
Broad-leaved dock	<i>Rumex obtusifolius</i>				4				
Cock's-foot	<i>Dactylis glomerata</i>	5	1				4	5	
Common nettle	<i>Urtica dioica</i>					1			
Creeping buttercup	<i>Ranunculus repens</i>	7	6						
Creeping thistle (dead stems)	<i>Cirsium arvense</i>			4	5	3			
Dandelion	<i>Taraxacum agg.</i>			1					
False oat-grass (dead stems)	<i>Arrhenatherum elatius</i>			7					
Greater plantain	<i>Plantago major</i>	2							
Marsh foxtail	<i>Alopecurus geniculatus</i>						2	8	8
Nipplewort	<i>Lapsana communis</i>			1					
Oxeye daisy	<i>Leucanthemum vulgare</i>			7		2			
Perennial rye-grass	<i>Lolium perenne</i>	5	4	4			5	5	4
Rough meadow-grass	<i>Poa trivialis</i>	4	4				8	5	7
Smooth meadow-grass	<i>Poa pratensis</i>	4	3			4		4	4
Soft-brome	<i>Bromus hordeaceus</i>						7		
Tall fescue	<i>Schedonorus arundinaceus</i>							4	
White clover	<i>Trifolium repens</i>	7							
Willowherb sp.	<i>Chamerion sp.</i>					1			
Yorkshire-fog	<i>Holcus lanatus</i>		8			2			2
Total species per m²		7	6	6	3	6	5	6	5
% Moss Cover		0	0	40	0	60	0	0	0
% Bare Ground		3	10	0	80	20	0	0	0
Average Sward Height (cm)		20	20	40	80	30	80	80	60

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)								
		E23	E24	E25	F20	F21	F22	A11	A12	A13
Cock's-foot	<i>Dactylis glomerata</i>	4	4	7	7	7	7	3		
False oat-grass	<i>Arrhenatherum elatius</i>							5		
Marsh foxtail	<i>Alopecurus geniculatus</i>				5	2	2			
Meadow foxtail	<i>Alopecurus pratensis</i>	6	4	4					6	7
Perennial rye-grass	<i>Lolium perenne</i>	4	6	6	4			7	7	5
Rough meadow-grass	<i>Poa trivialis</i>	5	7	6	7	8	7		4	7
Smooth meadow-grass	<i>Poa pratensis</i>							4	5	4
Soft-brome	<i>Bromus hordeaceus</i>	2	4			1	4			
Yorkshire-fog	<i>Holcus lanatus</i>		2	4				7	5	8
Red fescue	<i>Festuca rubra</i>							4	4	4
Total species per m²		5	6	5	4	4	4	6	6	6
% Moss Cover		0	0	0	0	0	0	0	0	0
% Bare Ground		0	0	0	0	0	0	0	0	0
Average Sward Height (cm)		40	30	40	80	60	80	30	40	40

Date: 21/05/2024

Weather: dry, overcast (8 oktas), 17°C, light breeze

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)						
		A14	A15	D10	D11	D12	D13	D14
Annual meadow-grass	<i>Poa annua</i>						3	
Ash (seedlings)	<i>Fraxinus excelsior</i>					2		
Broad-leaved dock	<i>Rumex obtusifolius</i>							2
Cock's-foot	<i>Dactylis glomerata</i>	4						
Common field-speedwell	<i>Veronica persica</i>						1	
Common ragwort	<i>Senecio jacobaea</i>				1			2
Common vetch	<i>Vicia sativa</i> subsp. <i>segetalis</i>					1		
Cow parsley	<i>Anthriscus sylvestris</i>	1						
Creeping buttercup	<i>Ranunculus repens</i>					5		5
Cuckooflower (leaf)	<i>Cardamine pratensis</i>				1			
Cut-leaved crane's-bill	<i>Geranium dissectum</i>			1	1		1	
Dandelion	<i>Taraxacum</i> agg.			1	1	1		
Dove's-foot crane's-bill	<i>Geranium molle</i>			1				
False oat-grass	<i>Arrhenatherum elatius</i>							1
Feverfew	<i>Tanacetum parthenium</i>							2
Hairy st johns wort	<i>Hypericum hirsutum</i>							1
Hedge bindweed	<i>Calystegia sepium</i>			1				
Herb-robert	<i>Geranium robertianum</i>							1
Mayweed species (only leaves)	<i>Matricaria</i> sp.						1	
Meadow foxtail	<i>Alopecurus pratensis</i>	7						
Perennial rye-grass	<i>Lolium perenne</i>		4		8			
Primrose	<i>Primula vulgaris</i>							1
Red fescue	<i>Festuca rubra</i>			4				
Rough meadow-grass	<i>Poa trivialis</i>	6	6	4	5	6	3	5
Soft-brome	<i>Bromus hordeaceus</i>	6	4		5	3		
Square-stalked willowherb	<i>Epilobium tetragonum</i>				1	6	7	
Willowherb sp.	<i>Chamerion</i> sp.			2				2
Wood avens	<i>Geum urbanum</i>					1		
Yorkshire-fog	<i>Holcus lanatus</i>	8	9	3	5	7		
Total species per m²		6	4	8	9	9	6	10
% Moss Cover		0	0	0	0	0	10	30
% Bare Ground		0	0	40	10	10	60	10
Average Sward Height (cm)		40	40	20	30	30	10	20

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)					
		D15	D16	C7	C8	C9	C10
Perennial rye-grass	<i>Lolium perenne</i>	10	10				
Rough meadow-grass	<i>Poa trivialis</i>			10	10	10	10
White clover	<i>Trifolium repens</i>			1	1	1	1
Total species per m²		1	1	2	2	2	2
% Moss Cover		0	0	0	0	0	
% Bare Ground		0.3	0.3	0	0	0	0
Average Sward Height (cm)		15	15	50	50	50	50

Survey date: 16/07/2024

Weather: showers to start, overcast (8 oktas), still, 13°C

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)							
		F2	F3	F4	F5	F6	F7	F8	F9
Bitter vetch	<i>Vicia ervilia</i>		1						
Black medick	<i>Medicago lupulina</i>							1	
Blackthorn	<i>Prunus spinosa</i>				2				
Cat's ear	<i>Hypochaeris radicata</i>			3				3	
Cleavers	<i>Galium aparine</i>	2				2			
Cock's-foot	<i>Dactylis glomerata</i>	4	3	3				4	2
Common bent	<i>Agrostis capillaris</i>			3				6	
Common nettle	<i>Urtica dioica</i>				3				
Common ragwort	<i>Senecio jacobaea</i>							1	
Cow parsley	<i>Anthriscus sylvestris</i>				2				
Creeping bent	<i>Agrostis stolonifera</i>	5							5
Creeping buttercup	<i>Ranunculus repens</i>			3			8		8
Creeping thistle	<i>Cirsium arvense</i>					4	2		
Elder	<i>Sambucus nigra</i>							1	
False oat-grass	<i>Arrhenatherum elatius</i>	6			8	9			
Great willowherb	<i>Epilobium hirsutum</i>					1			
Hedge bindweed	<i>Calystegia sepium</i>	3							
Hogweed	<i>Heracleum sphondylium</i>	3		1					
Perennial rye-grass	<i>Lolium perenne</i>	5		2				4	3
Red bartsia	<i>Odontites vernus</i>			2					
Ribwort plantain	<i>Plantago lanceolata</i>			5				2	
Rye brome	<i>Bromus secalinus</i>								2
Sheep's-fescue	<i>Festuca ovina</i>		3						
Smooth tare	<i>Vicia tetrasperma</i>			6			2	6	
Soft-rush	<i>Juncus effusus</i>								1
Taraxacum sp.	<i>Taraxacum sp.</i>			2					
White clover	<i>Trifolium repens</i>			3			2		
Wood dock	<i>Rumex sanguineus</i>				5				
Yorkshire-fog	<i>Holcus lanatus</i>		9	8			6	6	
Total species per m²		7	4	12	5	4	5	10	5
% Bare Ground		0	30	30	0	0	0	50	10
% Moss Cover		0	0	0	10	0	5	10	5
Average Sward Height (cm)		130	70	80	100	130	5	50	15

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)							
		F10	F11	F12	F13	F14	F15	F16	F17
Bitter vetch	<i>Vicia ervilia</i>	1							
Bramble	<i>Rubus fruticosus</i> agg.		2				2		
Bristly oxtongue	<i>Helminthotheca echioides</i>			1	2				
Broad-leaved dock	<i>Rumex obtusifolius</i>			1	4				
Cleavers	<i>Galium aparine</i>								3
Cock's-foot	<i>Dactylis glomerata</i>		3					4	1
Common couch	<i>Elytrigia repens</i>						2		
Common nettle	<i>Urtica dioica</i>								1
Common ragwort	<i>Senecio jacobaea</i>	1		1	2				
Cow parsley	<i>Anthriscus sylvestris</i>						1		
Creeping bent	<i>Agrostis stolonifera</i>			1	4	3			
Creeping thistle	<i>Cirsium arvense</i>	2		8	8		5		
Crested dog's tail	<i>Cynosurus cristatus</i>	2							
False oat-grass	<i>Arrhenatherum elatius</i>		5			5	7	4	9
Great willowherb	<i>Epilobium hirsutum</i>			1					
Hogweed	<i>Heracleum sphondylium</i>		1			1	3		1
Marsh willowherb	<i>Epilobium palustre</i>			5	4				
Meadow buttercup	<i>Ranunculus acris</i>		1						
Meadowsweet	<i>Filipendula ulmaria</i>		4						
Oxeye daisy	<i>Leucanthemum vulgare</i>						3		
Pedunculate oak	<i>Quercus robur</i>			1					
Perennial rye-grass	<i>Lolium perenne</i>	4						3	
Red fescue	<i>Festuca rubra</i>						3		
Ribwort plantain	<i>Plantago lanceolata</i>			1					
Rye brome	<i>Bromus secalinus</i>	2							
Smooth tare	<i>Vicia tetrasperma</i>			1		5	3		
Spear thistle	<i>Cirsium vulgare</i>						1		
Taraxacum sp.	<i>Taraxacum</i> sp.							1	
White clover	<i>Trifolium repens</i>					3			
Wild teasel	<i>Dipsacus fullonum</i>		1						
Wood dock	<i>Rumex sanguineus</i>						2	1	
Yorkshire-fog	<i>Holcus lanatus</i>	9				8		8	
Total species per m²		7	7	10	6	6	11	6	5
% Bare Ground		2	0	0	0	0	0	0	0
% Moss Cover		20	0	60	60	0	0	0	0
Average Sward Height (cm)		80	110	100	120	80	100	120	100

Date: 17/07/2024

Weather: dry, sunny spells (4 otkas), light breeze, 22°C

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)					
		H1	H2	H3	H4	H5	H6
Amphibious bistort	<i>Persicaria amphibia</i>				3		
Annual meadow-grass	<i>Poa annua</i>			4			
Bristly oxtongue	<i>Helminthotheca echioides</i>				5		
Cock's-foot	<i>Dactylis glomerata</i>					3	
Common nettle	<i>Urtica dioica</i>			2	3		
Creeping bent	<i>Agrostis stolonifera</i>	9	9	9			5
Creeping thistle	<i>Cirsium arvense</i>		1				
False oat-grass	<i>Arrhenatherum elatius</i>				5		
False oat-grass	<i>Arrhenatherum elatius</i>					8	
Garlic mustard	<i>Alliaria petiolata</i>					3	
Hogweed	<i>Heracleum sphondylium</i>					2	
Perennial rye-grass	<i>Lolium perenne</i>						2
Phalaris sp.	<i>Phalaris sp.</i>				5		
Timothy	<i>Phleum pratense</i>			2			2
Tufted hair-grass	<i>Deschampsia cespitosa subsp. cespitosa</i>	4	4	1			8
Wood dock	<i>Rumex sanguineus</i>				4		
Yorkshire-fog	<i>Holcus lanatus</i>						2
Total species per m²		2	3	5	6	4	5
% Moss Cover		0	0	0	0	15	0
% Bare Ground		0	0	0	0	0	0
Average Sward Height (cm)		5	4	4	130	80	100

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)			
		C1	C2	C3	C4
Black medick	<i>Medicago lupulina</i>			5	
Cock's-foot	<i>Dactylis glomerata</i>	3	3		3
Common knapweed	<i>Centaurea nigra</i>	2			
Common ragwort	<i>Senecio jacobaea</i>	1			
Common vetch	<i>Vicia sativa subsp. segetalis</i>		2		
Creeping bent	<i>Agrostis stolonifera</i>	3			
Creeping buttercup	<i>Ranunculus repens</i>		2	6	
Creeping cinquefoil	<i>Potentilla reptans</i>	4	4		2
Crested dog's tail	<i>Cynosurus cristatus</i>			6	
False oat-grass	<i>Arrhenatherum elatius</i>	6	4	4	6
Field bindweed	<i>Convolvulus arvensis</i>		2		3
Fragrant agrimony	<i>Agrimonia procera</i>		1		
Greater plantain	<i>Plantago major</i>			2	
Hogweed	<i>Heracleum sphondylium</i>	2	2	1	
Meadow buttercup	<i>Ranunculus acris</i>		1		
Meadow vetchling	<i>Lathyrus pratensis</i>		3		
Perennial rye-grass	<i>Lolium perenne</i>			4	
Red clover	<i>Trifolium pratense</i>		4		6
Red fescue	<i>Festuca rubra</i>	4	4		6
Ribwort plantain	<i>Plantago lanceolata</i>			5	
Sheep's-fescue	<i>Festuca ovina</i>			4	
Taraxacum sp.	<i>Taraxacum sp.</i>		2		
Tor grass	<i>Brachypodium pinnatum</i>	5			
White clover	<i>Trifolium repens</i>		3		
Wood dock	<i>Rumex sanguineus</i>		1	1	
Yorkshire-fog	<i>Holcus lanatus</i>		4	2	
Total species per m²		9	16	11	6
% Moss Cover		10	0	0	0
% Bare Ground		0	0	0	5
Average Sward Height (cm)		110	120	130	70

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)													
		D1	D2	D3	D4	D5	D6	D7	E8	E9	E11	E12	E13	E14	
Barley	<i>Hordeum vulgare</i>						1								
Black medick	<i>Medicago lupulina</i>							1							
Blackthorn	<i>Prunus spinosa</i>										3				
Bramble	<i>Rubus fruticosus</i> agg.		2				3				4				
Broad-leaved dock	<i>Rumex obtusifolius</i>													2	
Cock's-foot	<i>Dactylis glomerata</i>	3	4	4	2	4	2	4	7		5	4			
Common couch	<i>Elytrigia repens</i>												2		
Common field-speedwell	<i>Veronica persica</i>														
Common field-speedwell	<i>Veronica persica</i>		2												
Common knapweed	<i>Centaurea nigra</i>			2			6								
Common ragwort	<i>Senecio jacobaea</i>											1			
Common vetch	<i>Vicia sativa</i> subsp. <i>segetalis</i>											2			
Creeping bent	<i>Agrostis stolonifera</i>	4		2	5		5			4	5		4	4	
Creeping buttercup	<i>Ranunculus repens</i>	1	2		6			1					7	3	
Creeping cinquefoil	<i>Potentilla reptans</i>								5						
Cut-leaved crane's-bill	<i>Geranium dissectum</i>					1		4		3					
Dove's-foot crane's-bill	<i>Geranium molle</i>						3								
Dove's-foot crane's-bill	<i>Geranium molle</i>									3					
False oat-grass	<i>Arrhenatherum elatius</i>	2	2	4	2		6		6	4	5	3		4	
Field bindweed	<i>Convolvulus arvensis</i>		2	4								3			
Greater plantain	<i>Plantago major</i>		2					2							
Hogweed	<i>Heracleum sphondylium</i>			1		1	1		1		4	2			
Marsh foxtail	<i>Alopecurus geniculatus</i>														
Marsh foxtail	<i>Alopecurus geniculatus</i>											2			
Marsh willowherb	<i>Epilobium palustre</i>									2					
Meadow vetchling	<i>Lathyrus pratensis</i>			4										7	
Mouse-ear species	<i>Cerastium</i> sp.					2									
Nipplewort	<i>Lapsana communis</i>										1				
Pale sedge	<i>Carex pallescens</i>			5											
Perennial rye-grass	<i>Lolium perenne</i>	3	4		4			5					4		
Red bartsia	<i>Odontites vernus</i>		4	4											
Red clover	<i>Trifolium pratense</i>				4										
Ribwort plantain	<i>Plantago lanceolata</i>		2		4			2							
Rough bluegrass	<i>Poa trivialis</i>							3							
Sheep's-fescue	<i>Festuca ovina</i>				4	4				4					
Smooth meadow-grass	<i>Poa pratensis</i>							2							
Smooth tare	<i>Vicia tetrasperma</i>			4			2					2	2		
Taraxacum sp.	<i>Taraxacum</i> sp.				2			2							
Timothy	<i>Phleum pratense</i>		7	4	2			5							
Tufted hair-grass	<i>Deschampsia cespitosa</i> subsp. <i>cespitosa</i>													4	
Upright hedge-parsley	<i>Torilis japonica</i>		2	1											
White clover	<i>Trifolium repens</i>		4		4	5									
Wood dock	<i>Rumex sanguineus</i>	1											1		
Yorkshire-fog	<i>Holcus lanatus</i>	7				9						6	7	4	
Total species per m ²		7	13	12	11	7	9	11	4	6	7	9	7	7	
% Moss Cover		0	0	0	0	5	0	5	0	5	10	0	0	0	
% Bare Ground		0	5	0	0	0	0	0	0	40	5	0	0	0	
Average Sward Height (cm)		110	100	20	100	120	120	70	120	10	15	50	20	80	

Date: 19/07/2024

Weather: dry, clear sky (0 oktas), still, 22°C

*SSSI indicates the offsite Clarborough Tunnel SSSI

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)								SSSI*
		B1	B2	B3	B4	B5	B6	C5	C6	
Black bent	<i>Agrostis gigantea</i>			1		2	3			
Black medick	<i>Medicago lupulina</i>	2								4
Blackthorn	<i>Prunus spinosa</i>				4	4	7			
Bramble	<i>Rubus fruticosus</i> agg.					2			2	
Cat's ear	<i>Hypochaeris radicata</i>		2							3
Cock's-foot	<i>Dactylis glomerata</i>				2		2		5	2
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>									2
Common couch	<i>Elytrigia repens</i>				2					
Common Ivy	<i>Hedera helix</i>			2					1	
Common knapweed	<i>Centaurea nigra</i>				6	2	2			
Creeping bent	<i>Agrostis stolonifera</i>		3	4				5		
Creeping buttercup	<i>Ranunculus repens</i>	3	3		4	2		3		
Creeping thistle	<i>Cirsium arvense</i>								2	
Crested dog's tail	<i>Cynosurus cristatus</i>	6	3	8						5
Curled Dock	<i>Rumex crispus</i>							1		
Daisy	<i>Bellis perennis</i>									2
English elm	<i>Ulmus procera</i>			1						
False oat-grass	<i>Arrhenatherum elatius</i>		5	6	5	5	7	5	5	
Field bindweed	<i>Convolvulus arvensis</i>				3					
Glaucus sedge (unconfirmed grazed sample)	<i>Carex flacca</i>									2
Goat's-beard	<i>Tragopogon pratensis</i>			2						
Greater bird's-foot-trefoil	<i>Lotus pedunculatus</i>				1					
Greater plantain	<i>Plantago major</i>	1								
Hawthorn	<i>Crataegus monogyna</i>									1
Hedge bindweed	<i>Calystegia sepium</i>		2							
Hogweed	<i>Heracleum sphondylium</i>			1			1			
Meadow buttercup	<i>Ranunculus acris</i>				2					
Meadow vetchling	<i>Lathyrus pratensis</i>					5	2			
Meadowsweet	<i>Filipendula ulmaria</i>				3	5				
Perennial rye-grass	<i>Lolium perenne</i>	4	3							
Perforate St John's-wort	<i>Hypericum perforatum</i>	1								
Quaking-grass	<i>Briza media</i>									2
Red clover	<i>Trifolium pratense</i>				4	2				
Ribwort plantain	<i>Plantago lanceolata</i>				3	2				
Selfheal	<i>Prunella vulgaris</i>	4								
Sheep's-fescue	<i>Festuca ovina</i>			5	6	3	4			2
Smooth tare	<i>Vicia tetrasperma</i>				3	2				
Spiny restharrow	<i>Ononis spinosa</i>					2				
Taraxacum sp.	<i>Taraxacum</i> sp.		3	4						
Timothy	<i>Phleum pratense</i>	2			1			5		
White clover	<i>Trifolium repens</i>	6			3			3		2
Wood dock	<i>Rumex sanguineus</i>			1					1	
Yorkshire-fog	<i>Holcus lanatus</i>	2	5		2	3			5	5
Total species per m²		10	9	11	17	14	8	6	7	12
% Moss Cover		0	0	30	20	0	0	0	0	10
% Bare Ground		0	0	0	0	0	0	0	0	5
Average Sward Height (cm)		30	50	60	150	100	130	70	110	4

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)							
		E1	E2	E3	E4	E5	E6	E7	E10
Black bent	<i>Agrostis gigantea</i>					2			
Black medick	<i>Medicago lupulina</i>		3	3					
Cat's ear	<i>Hypochaeris radicata</i>								4
Cock's-foot	<i>Dactylis glomerata</i>					5	6	4	
Common centaury	<i>Centaureum erythraea</i>								2
Common knapweed	<i>Centaurea nigra</i>	4		5					
Common ragwort	<i>Senecio jacobaea</i>			2					3
Common vetch	<i>Vicia sativa subsp. segetalis</i>								2
Creeping bent	<i>Agrostis stolonifera</i>		5		4				3
Creeping buttercup	<i>Ranunculus repens</i>	5	5			3	4		
Creeping thistle	<i>Cirsium arvense</i>				3			3	
Crested dog's tail	<i>Cynosurus cristatus</i>	5		5					
Curled dock	<i>Rumex crispus</i>		1						1
Dove's-foot crane's-bill	<i>Geranium molle</i>				3				
False oat-grass	<i>Arrhenatherum elatius</i>	2					3	6	3
Hogweed	<i>Heracleum sphondylium</i>				3			3	
Meadow buttercup	<i>Ranunculus acris</i>								
Oxeye daisy	<i>Leucanthemum vulgare</i>			4					
Perennial rye-grass	<i>Lolium perenne</i>					5			
Red bartsia	<i>Odontites vernus</i>	2	3						5
Red fescue	<i>Festuca rubra</i>	3	3	4	2				
Ribwort plantain	<i>Plantago lanceolata</i>	4		6	4				
Rosebay willowherb	<i>Chamerion angustifolium</i>								2
Selfheal	<i>Prunella vulgaris</i>	4							
Smooth tare	<i>Vicia tetrasperma</i>	4	6			4			
Taraxacum sp.	<i>Taraxacum sp.</i>						1	2	3
Timothy	<i>Phleum pratense</i>				2	2			
White clover	<i>Trifolium repens</i>		4	5					
Wood dock	<i>Rumex sanguineus</i>								
Yorkshire-fog	<i>Holcus lanatus</i>		4	4	8	5	3		
Total species per m2		9	9	9	8	7	5	5	10
% Moss Cover		20	0	20	0	0	0	0	10
% Bare Ground		5	0	0	10	0	0	0	20
Average Sward Height (cm)		10	50	100	100	30	100	100	50

Date: 23/07/2024

Weather: dry, sunny (3 otkas), light breeze, 20°C

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)		
		E14	E15	E16
Annual meadow-grass	<i>Poa annua</i>		3	
Black medick	<i>Medicago lupulina</i>		4	3
Bristly oxtongue	<i>Helminthotheca echioides</i>			1
Creeping bent	<i>Agrostis stolonifera</i>	4	5	4
Daisy	<i>Bellis perennis</i>		3	
Greater plantain	<i>Plantago major</i>			4
Mouse-ear species	<i>Cerastium sp.</i>	2	4	
Perennial rye-grass	<i>Lolium perenne</i>			5
Red clover	<i>Trifolium pratense</i>			3
Red fescue	<i>Festuca rubra</i>		5	
Ribwort plantain	<i>Plantago lanceolata</i>			3
Sheep's-fescue	<i>Festuca ovina</i>			5
Springy turf-moss	<i>Rhytidiadelphus squarrosus</i>		3	
Taraxacum sp.	<i>Taraxacum sp.</i>	2		
Timothy	<i>Phleum pratense</i>			5
White clover	<i>Trifolium repens</i>	4		
Yorkshire-fog	<i>Holcus lanatus</i>	6		
Total species per m ²		5	7	9
% Moss Cover		0	10	0
% Bare Ground		0	0	30
Average Sward Height (cm)		7	7	20

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)									
		A1	A2	A3	A4	A5	A6	A7	A8	A9	A10
Ash	<i>Fraxinus excelsior</i>	1									
Black bent	<i>Agrostis gigantea</i>		3							4	
Black medick	<i>Medicago lupulina</i>	3							1		4
Blackthorn	<i>Prunus spinosa</i>				2		2		1		1
Bramble	<i>Rubus fruticosus agg.</i>	2					4		1	3	
Bristly ox-tongue	<i>Helminthotheca echinoides</i>	2									
Cock's-foot	<i>Dactylis glomerata</i>		3							5	
Common Ivy	<i>Hedera helix</i>									1	
Common knapweed	<i>Centaurea nigra</i>							6			
Common ragwort	<i>Senecio jacobaea</i>	2		3							1
Creeping bent	<i>Agrostis stolonifera</i>	4	4								4
Creeping buttercup	<i>Ranunculus repens</i>			4							
Creeping thistle	<i>Cirsium arvense</i>			3		2					
Crested dog's tail	<i>Cynosurus cristatus</i>				6		4		6		
Dove's-foot crane's-bill	<i>Geranium molle</i>										4
False oat-grass	<i>Arrhenatherum elatius</i>	2	6	4	4	8	6	6			6
Field bindweed	<i>Convolvulus arvensis</i>							3			
Goat's-beard	<i>Tragopogon pratensis</i>										2
Greater plantain	<i>Plantago major</i>							4			
Hawthorn	<i>Crataegus monogyna</i>									1	
Hogweed	<i>Heracleum sphondylium</i>					2		2			
Horsetail species	<i>Equisetum sp.</i>			5							
Meadow foxtail	<i>Alopecurus pratensis</i>		6	2			1				
Meadow vetchling	<i>Lathyrus pratensis</i>							3			
Pedunculate oak	<i>Quercus robur</i>			2							
Perennial rye-grass	<i>Lolium perenne</i>				3				5		4
Red clover	<i>Trifolium pratense</i>								5		1
Red fescue	<i>Festuca rubra</i>		3					3			
Ribwort plantain	<i>Plantago lanceolata</i>							2			
Sheep's-fescue	<i>Festuca ovina</i>						4				4
Smooth tare	<i>Vicia tetrasperma</i>	3				2	2				2
Soft-brome	<i>Bromus hordeaceus</i>	4									4
Taraxacum sp.	<i>Taraxacum sp.</i>				3			3	2	1	2
Timothy	<i>Phleum pratense</i>		1	3		1			5	3	
White clover	<i>Trifolium repens</i>							4	2		
Wood dock	<i>Rumex sanguineus</i>									4	
Yorkshire-fog	<i>Holcus lanatus</i>	6	4	6	6		5	2	4		4
Total species per m²		10	8	9	6	5	8	11	10	8	14
% Moss Cover		5	0	0	0	0	0	0	5	0	0
% Bare Ground		5	0	7	0	0	5	5	0	0	0
Average Sward Height (cm)		90	70	100	30	140	10	60	90	110	6

Date: 25/07/2024

Weather: overcast (8 oktas), intermittent light rain, light breeze, 20°C

Common name	Scientific name	Quadrat reference (refer to Figure 7.3.3 for location)		
		D8	D9	D10
Bramble	<i>Rubus fruticosus agg.</i>		4	
Common Ivy	<i>Hedera helix</i>		3	
Common nettle	<i>Urtica dioica</i>		2	
Common ragwort	<i>Senecio jacobaea</i>	4		
Creeping bent	<i>Agrostis stolonifera</i>	7		
Cut-leaved crane's-bill	<i>Geranium dissectum</i>			1
Dandelion	<i>Taraxacum agg.</i>			1
Dove's-foot crane's-bill	<i>Geranium molle</i>			1
False oat-grass	<i>Arrhenatherum elatius</i>		9	
Field bindweed	<i>Convolvulus arvensis</i>	2		
Great willowherb	<i>Epilobium hirsutum</i>	1		
Hedge bindweed	<i>Calystegia sepium</i>			1
Hogweed	<i>Heracleum sphondylium</i>		3	
Nipplewort	<i>Lapsana communis</i>		3	
Perennial rye-grass	<i>Lolium perenne</i>	4		
Red fescue	<i>Festuca rubra</i>			4
Rough meadow-grass	<i>Poa trivialis</i>			4
Smooth tare	<i>Vicia tetrasperma</i>	1		
Spear thistle	<i>Cirsium vulgare</i>	4		
Willowherb sp.	<i>Chamerion sp.</i>			2
Yorkshire-fog	<i>Holcus lanatus</i>			3
Total species per m²		7	6	8
% Moss Cover		0	0	0
% Bare Ground		10	0	40
Average Sward Height (cm)		40	90	20

Appendix 7.3.3: Preliminary hedgerow condition assessment results

7.3 The table below provides a summary of the preliminary hedgerow condition assessments completed to date (i.e. the ground-truthing surveys). This shows the results of surveys of 51 hedgerows that had potential to be species-rich. Further data regarding hedgerow condition (inferred from other data sources) and The Hedgerow Regulations assessment findings will be provided at a later stage.

- A1: Height > 1.5 m average along length
- A2: Width > 1.5 m average along length
- B1: Gap between ground and base of canopy <0.5 m for >90% of length
- B2: Gaps make up <10% of total length; and no canopy gaps >5 m
- C1: Undisturbed ground and perennial vegetation
- C2: Nutrient-enriched perennial vegetation
- D1: >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species
- D2: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities
- E1: There is more than one age-class (or morphology) of tree present (for example: young, mature, veteran and or ancient), and there is on average at least one mature, ancient or veteran tree present per 20 – 50 m of hedgerow
- E2: At least 95% of hedgerow trees are in a healthy condition (excluding veteran features valuable for wildlife). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity

Ref.	Habitat	Condition	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	Comments
AH1	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
AH15	Native Species Rich Hedgerow	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes			West corner is scrub.
AH16	Native Species Rich Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
AH17	Native Species Rich Hedgerow with trees	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	
AH18	Native Hedgerow with trees	Good	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	One gap of 5 m and ca. five gaps of 1 m.
AH20	Native Species Rich Hedgerow	Good	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes			7 m gap in west.
AH21	Native Species Rich Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Wide in places, nearing 5 m.
AH22	Native Hedgerow with trees	Moderate	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Multiple 1-4 m gaps.
AH23	Native Hedgerow	Good	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes			Multiple 1-2 m gaps.
AH24	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
AH26	Native Hedgerow - Associated with bank or ditch	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes			
AH27	Native Hedgerow - Associated with bank or ditch	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes			4 m gap /gate, 1 m gap, ditch present along over half.
AH28	Native Hedgerow	Moderate	Yes	Yes	No	No	Yes	Yes	Yes	Yes			10 m gap, three 1 m gaps, 4 m gap.
AH3	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
AH31	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes			

Ref.	Habitat	Condition	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	Comments
AH34	Native Hedgerow with trees - Associated with bank or ditch	Good	Yes	Yes		Yes	Yes	Yes	Yes	Yes	No	Yes	
AH35	Native Species Rich Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
AH36	Native Species Rich Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Ditch present along about 1/3 of length.
AH37	Native Species Rich Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
AH4	Native Species Rich Hedgerow with trees	Good	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Approximately four gaps that are 5 m wide.
AH40	Native Hedgerow with trees - Associated with bank or ditch	Moderate	Yes	Yes	Yes	No	Yes	Yes	Yes	No			12 m gap in west, failing damage along centre south side.
AH43	Native Hedgerow	Good	Yes	Yes	Yes	No	No	Yes	Yes	Yes			Three 9 m gaps, 5 m track damage, southwest section is separated by >20 m (still recorded on AH40d and e to be split).
AH45	Native Species Rich Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Not connected to either south or northern hedgerow. 10 m gap north. 12 m gap south.
AH46	Native Hedgerow	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes			Gap in corner. Short northern section will be connected to the hedgerows going east. Multiple 1 m gaps.
AH5	Native Hedgerow with trees	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	
BH11	Native Hedgerow	Good	Yes	No	Yes	Yes	Yes	No	Yes	Yes			
BH12	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Partly forms part of the LWS.
Bh16	Native Hedgerow	Moderate	Yes	Yes	Yes	No	Yes	No	Yes	No			
BH4	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes			
Bh8	Native Species Rich Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	Yes	Yes	No	Yes	No			
BH9	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes			
Ch4	Native Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes			
Ch5	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes			
DH29	Native Hedgerow	Good	Yes	Yes	No	Yes	No	Yes	Yes	Yes			1 m gap.
DH32a	Native Species Rich Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes			Nettle cover high on roadside.
DH32b	Native Species Rich Hedgerow - Associated with bank or ditch	Moderate	Yes	Yes	Yes	No	No	No	Yes	Yes			8 m gap field entrance. 2 m gap. 6 m gap. 4 m gap.

Ref.	Habitat	Condition	A1	A2	B1	B2	C1	C2	D1	D2	E1	E2	Comments
DH39	Native Species Rich Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	No	Yes	No	Yes	Yes			11 m gap.
DH40	Native Hedgerow	Good	Yes	Yes	Yes	No	Yes	No	Yes	Yes			3 m gap, 3 m gap, 7 m gap field entrance.
DH42	Native Species Rich Hedgerow	Good	Yes	Yes	No	Yes	Yes	No	Yes	Yes			
DH48	Native Species Rich Hedgerow	Good	Yes	Yes	No	Yes	Yes	No	Yes	Yes			
EH4	Native Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
EH5	Native Hedgerow	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	
EH6	Native Hedgerow	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	
EH60	Native Hedgerow with trees	Moderate	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	One gap next to car park 18 m wide. One gap 6 m wide.
EH66	Native Species Rich Hedgerow	Moderate	Yes	Yes	No	No	Yes	No	Yes	Yes			
EH7	Native Hedgerow	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
EH8	Native Hedgerow	Good	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Gap far north 4 m wide x2. 11 m gap. 16 m gap. 18 m gap.
FH15	Native Hedgerow	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	
FH16	Native Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
FH20	Native Hedgerow - Associated with bank or ditch	Good	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	
FH6	Native Hedgerow - Associated with bank or ditch	Good	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Almost defunct hedge, along a dry ditch. One gap 2 m, two gaps 20 m.

Appendix 7.3.4: Ditch assessment results

Ditch Reference	Length (km)	Condition criteria passes								Criteria passed	Condition
		A	B	C	D	E	F	G	H		
BD1	0.307			Yes					Yes	2	Poor
BD2	0.050	Yes							Yes	2	Poor
DD1	0.330	Yes				Yes			Yes	3	Poor
DD2	0.173	Yes		Yes		Yes			Yes	4	Poor
DD3	0.474	Yes				Yes		Yes	Yes	4	Poor
DD4	0.303	Yes		Yes	Yes	Yes			Yes	5	Poor
DD5	0.136	Yes		Yes		Yes		Yes	Yes	5	Poor
DD6	0.784	Yes		Yes		Yes			Yes	4	Poor
ED1	0.325			Yes	Yes	Yes			Yes	4	Poor
ED10	0.206	Yes		Yes	Yes	Yes			Yes	5	Poor
ED11a	0.466	Yes	Yes	Yes	Yes	Yes			Yes	6	Moderate
ED11b	0.169	Yes	Yes	Yes	Yes	Yes			Yes	6	Moderate
ED2	0.368				Yes	Yes			Yes	3	Poor
ED3	0.172	Yes		Yes	Yes	Yes			Yes	5	Poor
ED4	0.100	Yes		Yes	Yes	Yes			Yes	5	Poor
ED5	0.388	Yes			Yes	Yes			Yes	4	Poor
ED6	0.117	Yes		Yes		Yes			Yes	4	Poor
ED7	0.172	Yes		Yes		Yes			Yes	4	Poor
ED8	0.416	Yes	Yes	Yes	Yes	Yes		Yes	Yes	7	Moderate
ED9	0.195	Yes	Yes	Yes	Yes	Yes			Yes	6	Moderate
FD1 (a-c)	1.710	Yes	Yes	Yes	Yes	Yes		Yes	Yes	7	Moderate
FD2	0.303	Yes		Yes		Yes		Yes	Yes	5	Poor
FD3	0.352					Yes	Yes		Yes	3	Poor
FD5	1.412	Yes	Yes		Yes	Yes			Yes	5	Poor
FD6	0.215	Yes				Yes			Yes	3	Poor
FD7	0.475	Yes				Yes			Yes	3	Poor
FD8	0.579	Yes		Yes	Yes	Yes			Yes	5	Poor
FD9	0.253					Yes			Yes	2	Poor
GD2	0.444			Yes	Yes			Yes	Yes	4	Poor
HD1	1.108								Yes	1	Poor
HD3	0.358	Yes				Yes		Yes	Yes	4	Poor
HD5b	0.217	Yes		Yes	Yes			Yes	Yes	5	Poor

Condition Criteria

A) The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.

B) A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.

C) There is less than 10% cover of filamentous algae and or duckweed *Lemna* spp. (these are signs of eutrophication).

D) A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.

E) Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.

F) Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1m in main drains.

G) Less than 10% of the ditch is heavily shaded.

H) There is an absence of non-native plant and animal species.