

**Steeple Renewables Project**  
Appendix 7.2: Designated Sites

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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 A data search for records of non-statutory local designated sites 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.
- 2.2 The MAGiC application (Defra, 2024a) was accessed, most recently in March 2024, to identify nationally designated statutory sites of nature conservation interest, such as Sites of Special Scientific Interest (SSSI) within 5 km of the Site, and ancient woodlands within 2 km of the Site. The desk study has also considered the location of the Site with respect to Natural England's Impact Risk Zones (IRZ) for SSSIs.
- 2.3 A search for internationally designated sites (including possible/proposed/candidate sites) of nature conservation interest, such as Ramsar Sites, proposed Ramsar Sites, Special Protection Areas (SPAs), Potential SPAs (pSPAs), Special Areas of Conservation (SACs), Possible SACs (pSACs), Candidate SACs (cSACs), and Sites of Community Importance (SCIs) was undertaken within 10 km of the Site. The search was extended to 30 km for SPAs and Ramsar Sites, as well as any SACs that include bats as qualifying features.
- 2.4 In the absence of prescriptive industry guidance on search areas on which to base the desk study, the distances of 2 km, 5 km, 10 km and 30 km have been decided with consideration of multiple factors. These include the CIEEM (2018) guidelines on determining Zones of Influence, consideration of the potential value of the Site to qualifying features, whether there are likely to be functional linkages from the Site to the wider landscape, the scale of the proposed scheme, as well as precedents set during the assessment of other Nationally Significant Infrastructure Project (NSIP) schemes of a similar nature.

### Field survey

- 2.5 Reference has been made to field survey data in this report. This includes data that was collected from within Local Wildlife Sites (LWSs) or SSSIs that intersect the Site or are directly adjacent to the Site. These sites include:
- Blue Stocking Lane, Clarborough LWS
  - High House Road Verges, Sturton le Steeple LWS
  - Thornhill Lane Drain, Littleborough LWS
  - Mother Drain, Upper Ings LWS
  - Littleborough Lagoons LWS
  - Clarborough Tunnel LWS and SSSI
- 2.6 For the designated sites with botanical interest (i.e., Blue Stocking Lane LWS, High House Road Verges LWS, Clarborough Tunnel LWS/SSSI), additional botanical quadrat data were collected as an opportunistic extension of the habitat survey being conducted. The key aim was to gain an indication of the current condition of the relevant designated sites and to identify the location of notable features.
- 2.7 A secondary aim was to identify potential opportunities for improving the management of these habitats as part of the overall enhancements arising from the Proposed Development. The Clarborough Tunnel LWS and SSSI is located outside the Site (40m southwest), and a walkover survey of the publicly accessible northeastern grassland unit of the SSSI was undertaken to identify the location and coverage of higher quality grassland and assess whether it may be considered as a donor site or used as a model for onsite grassland enhancements.

- 2.8 The designated sites with bird interest (i.e., Littleborough Lagoons LWS) naturally formed part of the Breeding Bird Survey and Wintering Bird Survey, and the survey data has been referred to where appropriate.
- 2.9 The survey for aquatic invertebrates targeted the LWSs that are designated for their aquatic invertebrate interest (i.e., Thornhill Lane Drain, LWS and Mother Drain LWS), as well as a representative sample of other watercourses on Site. The purpose of the survey was to identify the status and abundance of notable features.
- 2.10 Full methodology for relevant surveys may be found in Appendix 7.3: Habitat report, Appendix 7.4: Breeding bird report, Appendix 7.6: Wintering bird report, and Appendix 7.11: Aquatic invertebrates report.

#### **Consideration of potential limitations**

- 2.11 The main purpose of this report is to identify the location and principal interest of designated nature conservation sites. In that respect the report is not limited, although reliance has been placed on third party data. It is assumed that data provided by third parties is accurate and up to date.
- 2.12 The secondary purpose of this report is to summarise field-based data for the designated sites identified above. It is considered that no significant limitations to the aims of this report were encountered.

### 3 Results and summary interpretation

#### Statutory designated sites

- 3.1 Within the search areas, there are six biological SSSIs, four SACs, one SPA and one Ramsar site. The location, designation and summary description for each site are described in Table 7.2.1 and shown on Figures 7.2.1, 7.2.2 and 7.2.3.

**Table 7.2. 1: Statutory designated sites (biological only) within the desk study area.**

Site name	Designation	Distance from the Site	Summary of designation rationale
Clarborough Tunnel	SSSI	40 m southwest	Notified for its unimproved calcareous grassland that has formed on the cuttings and spoil heaps associated with the operational railway.
Chesterfield Canal	SSSI	1.9 km west	Nationally uncommon aquatic plant communities.
Lea Marsh	SSSI	2.3 km northeast	Unimproved floodplain meadow and wet pasture adjacent to the River Trent. Supports a number of scarce plant species and notable breeding wading bird species.
Ashton's Meadow	SSSI	2.2 km south	Unimproved, species-rich neutral grassland.
Treswell Wood	SSSI	2.5 km south	Ash-oak-maple wood and ancient semi-natural woodland on heavy clay soils.
Sutton and Lound Gravel Pits	SSSI	3.8 km west	Open water and margins that support an assemblage of breeding wetland birds and a nationally important population of wintering gadwall. The site also supports wintering and passage birds.
Birklands and Bilhaugh	SAC	17 km southwest	Supports Annex I habitat 'old acidophilous oak woods' and is notable for its rich invertebrate fauna, particularly spiders, and for a diverse fungal assemblage.
Hatfield Moor	SAC	19.5 km north	Lowland raised bog, that supports Annex I habitat 'degraded raised bogs still capable of natural regeneration'. Is also notable for its invertebrate fauna.
Thorne and Hatfield Moors	SPA	19.5 km north	Supports populations of European nightjar <i>Caprimulgus europaeus</i> , which is closely associated with lowland heathland and felled or recently planted conifer plantations. The site also supports small numbers (at non-qualifying levels) of other Annex I species: hen harrier <i>Circus cyaneus</i> , merlin <i>Falco columbarius</i> , short-eared owl <i>Asio flammeus</i> and hobby <i>Falco subbuteo</i> .

Site name	Designation	Distance from the Site	Summary of designation rationale
Humber Estuary	SAC	25.5 km north	Supports various Annex I coastal habitats, and Annex II species sea lamprey <i>Petromyzon marinus</i> , River lamprey <i>Lampetra fluviatilis</i> and grey seal <i>Halichoerus grypus</i> .
Humber Estuary	Ramsar	25.5 km north	A representative example of a near-natural estuary with the following component habitats: dune systems and humid dune slacks, estuarine waters, intertidal mud and sand flats, saltmarshes, and coastal brackish/saline lagoons. Supports internationally important assemblages of passage and wintering waders and waterfowl, as well as supporting aquatic and marine species.
Thorne Moor	SAC	28.2 km north	Lowland raised bog, that supports Annex I habitat 'degraded raised bogs still capable of natural regeneration'. Is also notable for its invertebrate fauna.

### **International Designated Sites**

- 3.2 The nearest internationally designated site is Birklands and Bilhaugh SAC which is 17 km from the Site. It is designated for its oak wood habitat, rich invertebrate fauna, and diverse fungal assemblage. Thorne and Hatfield Moors SPA is 19.5 km from Site. It is designated for its populations of European nightjar *Caprimulgus europaeus*, which is closely associated with lowland heathland and felled or recently planted conifer plantations. Hatfield Moor SAC is also 19.5 km away at its closest point and is designated for its bog habitat and invertebrate fauna. The Humber Estuary Ramsar is 25.5km from the Site and supports internationally important assemblages of passage and wintering waders and waterfowl, as well as supporting aquatic and marine species. The Humber Estuary SAC is designated for its coastal habitats and marine fauna. Thorne Moor SAC is more than 28 km from the Site and is designated for its bog habitats and invertebrate fauna.
- 3.3 Further detail on the features of International designated sites will be considered in a separate report to inform a Habitats Regulations Assessment, which will be provided as part of the application process.

### **Nationally Designated Sites**

- 3.4 The closest statutory designated site is the Claborough Tunnel SSSI, which is 40 m west of the Western Biodiversity Mitigation Area of the Proposed Development. This means that a small area of the Steeple Renewables Project (0.01 ha) falls within the Impact Risk Zone (IRZ)<sup>1</sup> of the SSSI that defines the area in which developments such as cable infrastructure, pipelines and transport proposals may pose a risk (noting that these activities are not proposed in this impact zone as part of the proposed development). The wider Site falls within and IRZ that has been defines the area in which operations such as airport, landfill, combustion may pose risks.
- 3.5 The SSSI is formed of four units (categorised as calcareous grassland units), which were assessed to be in unfavourable-recovering condition, last assessed by Natural England in 2011 (Natural England, 2024). A visit to the northeastern unit of the SSSI on 19 July 2024 confirmed that the SSSI

<sup>1</sup> The Impact Risk Zones (IRZs) are a GIS tool developed by Natural England to make an initial assessment of the likely risk of impacts on SSSIs posed by developments. The IRZs tool comprises a series of zones around each SSSI and within each zone, the tool specifies the types of development which, at that distance, have the potential to have adverse impacts.

is a mix of orchard, grassland, scrub and woodland. Sheep grazing is underway within the SSSI at low intensity (estimated 2-4 sheep/rams per ha at the time of the visit). Some damage to the grassland was observed from a recent campfire. A single grassland quadrat sample was undertaken within the SSSI to give an indication of species richness in comparison to the grasslands within the Site (noting that no calcareous grassland has been identified within the Site). Aerial imagery indicates that the proportion of open grassland within the SSSI is fairly low (ca. 0.8 ha out of the 8.5 ha SSSI), which was also evident during the walkover, and the quadrat sample indicates that the grassland supports ca. 12 species per m<sup>2</sup> (refer to Appendix 7.3: Habitat Report).

3.6 All other nationally designated sites are 1.9 km or more from the Site, and the Site does not overlap with their IRZs with regard to solar projects at this distance.

**Non-statutory designated sites and ancient woodland**

3.7 There are 30 non-statutory designated sites, one Ancient Semi-Natural Woodland (ASNW), and one Plantation on Ancient Woodland Sites (PAWS) within the 2 km search area. Five LWSs are within the Site boundary – detail of their current status has been provided below. Summary details of the non-statutory designated sites and ancient woodlands within the search area are provided in Table 7.2.2 below.

**Table 7.2. 2: Non-statutory designated sites and ancient woodland within 2 km of the Site**

Site Name and Designation	Distance from Site	Feature(s) of interest
<i>Nottinghamshire LWSs</i>		
Blue Stocking Lane, Claborough	Partially within the Site (Western Biodiversity Mitigation area)	A green lane with species-rich grassland and hedgerows. The LWS extends northwards out of the Site, along a woodland edge. For the part of the LWS within the Site, the LWS citation lists the following species as present: meadow fescue <i>Schedonorus pratensis</i> , tor-grass <i>Brachypodium pinnatum</i> common knapweed <i>Centaurea nigra</i> , meadow vetchling <i>Lathyrus pratensis</i> , lady's bedstraw <i>Galium verum</i> , spiny restharrow <i>Ononis spinosa</i> , and meadowsweet <i>Filipendula ulmaria</i> . All species except meadow fescue and tor-grass were observed within the three grassland quadrat samples taken from the part of the LWS that falls within the Site in July 2024 (refer to Appendix 7C: Habitat report). Meadow fescue and tor-grass were also not listed within the July 2023 survey data held by NBGRC. The quadrat samples indicate that the part of the LWS withing the Site includes otherer neutral grassland with 8-17 vascular plant species per m <sup>2</sup> . The diversity is lower in the south of the LWS, as blackthorn scrub and meadowsweet begin to dominate the sward.
High House Road Verges, Sturton le Steeple	Partially within the Site	A notable neutral grassland, ditch bank communities and species-rich hedgerow along a track. The LWS citation lists false oat-grass <i>Arrhenatherum elatius</i> , tall fescue <i>Schedonorus arundinaceus</i> , tor-grass <i>Brachypodium pinnatum</i> and cock's-foot <i>Dactylis glomerata</i> , agrimony <i>Agrimonia eupatoria</i> , common knapweed <i>Centaurea nigra</i> , cowslip <i>Primula veris</i> , meadow vetchling <i>Lathyrus pratensis</i> , greater stitchwort <i>Stellaria holostea</i> , hairy St John's-wort <i>Hypericum hirsutum</i> and primrose <i>Primula vulgaris</i> with wetter area at the eastern end supporting water figwort <i>Scrophularia auriculata</i> , water mint <i>Mentha</i>

Site Name and Designation	Distance from Site	Feature(s) of interest
		<p><i>aquatica</i> and common fleabane <i>Pulicaria dysenterica</i>.</p> <p>Three quadrat samples were taken from the part of the LWS that falls within The Site in July 2024 (refer to Appendix 7C: Habitat report), and these suggest that the trackside verge diversity ranges from 6 to 12 species per m<sup>2</sup>, with the greatest diversity in the eastern part of the LWS, nearer the railway, but still within the Site</p>
Mother Drain, Upper Ings	Partially within the Site (Eastern Biodiversity mitigation Area)	<p>A drain of interest for water beetles. The LWS citation makes reference to a pond, which may be an offsite pond to the east of the LWS boundary. The drain is described as supporting an assemblage of local species such as water beetle <i>Limnebius nitidus</i>, and water bugs <i>Notonecta maculata</i> and <i>Notonecta viridis</i>.</p> <p>Aquatic invertebrate surveys were undertaken on 03 June 2024 to confirm the current status of the invertebrate assemblage (refer to Appendix 7K: Aquatic invertebrates report for the full methodology) and the results, which are being analysed at the time of writing, will be provided within the Environmental Statement.</p>
Thornhill Lane Drain, Littleborough	Within the Site (Eastern Biodiversity mitigation Area)	<p>A drain of interest for water beetles. The LWS citation lists the following interests: 25 Water Beetle species and 5 water bug species have been recorded from the drain; including water beetles <i>Agabus uliginosus</i>, <i>Agabus didymus</i>, <i>Cercyon convexiusculus</i>, <i>Graptodytes pictus</i> and <i>Laccophilus hyalinus</i>. Water bugs recorded include Water scorpion <i>Nepa cinerea</i> and Water cricket <i>Velia caprai</i>.</p> <p>Aquatic invertebrate surveys were undertaken on 3 June 2024 to confirm the current status of the invertebrate assemblage (refer to Appendix 7K: Aquatic invertebrates report for the full methodology) and the results of the surveys will be provided within the Environmental Statement.</p>
Littleborough Lagoons	Within the Site (Eastern Biodiversity mitigation Area)	<p>A shallow lagoon with flood bank and drain of botanical and ornithological importance. The LWS citation lists species such as bulbous rush <i>Juncus bulbosus</i>, creeping yellow-cress <i>Rorippa sylvestris</i>, celery-leaved buttercup <i>Ranunculus sceleratus</i>, red goosefoot <i>Chenopodium rubrum</i>, water plantain <i>Alisma plantago-aquatica</i>, common spike-rush <i>Eleocharis palustris</i>, reed sweet-grass <i>Glyceria maxima</i> and greater yellow-cress <i>Rorippa amphibia</i> with willow <i>Salix</i> sp. and hawthorn <i>Crataegus monogyna</i> growing along the banks of the lagoon. The LWS is noted as having ornithological importance for wintering wildfowl and passage migrants. The wintering and breeding bird surveys undertaken by BSG Ecology during summer 2023 to summer 2024, found assemblages of wetland birds throughout the breeding and non-breeding seasons (refer to Appendix 7D: Breeding bird report, Appendix 7F: Wintering bird report).</p>
West Burton Meadow	Off-site, adjacent to the north boundary (<1 m west).	An unimproved ridge and furrow grassland with an excellent species content.

Site Name and Designation	Distance from Site	Feature(s) of interest
Clarborough Tunnel	40 m southwest	A fine example of species-rich calcareous grassland and scrub developed around the tunnel top and cuttings on an active railway line - a site of botanical and zoological interest.
Maumhill Wood	130 m northwest	A broadleaved woodland on Mercia Mudstone clays with a notable ground flora.
Burton Round Ditch	160 m northeast	A drain of interest for water beetles.
Caddow Wood (Northern Assart)	280 m south	A neglected coppice wood of considerable floristic interest.
West Burton Power Station	345 m northeast	An area of mature habitats within the power station of biological interest.
Caddow Wood (Southern Assarts)	440 m south	A discontinuous and open old woodland of some botanical interest.
Out Ings	435 m north	A diverse mosaic of grassland, open water and carr communities adjacent to the River Trent.
Muspitt Lane	435 m northwest	Narrow strip of roadside verge and ditch bank with several notable species.
North Leys Road (ditch), Coates	470 m south	A drain of interest for water beetles.
Retford Gate Green Lane	540 m south	Unimproved neutral grassland with noteworthy herbs and communities along a Green Lane.
West Burton Reedbed	590 m northeast	An extensive reedbed and associated carr woodland of botanical and note.
Clarborough Gypsum Pits	605 m west	An area of calcicolous scrub and grassland developed on the site of a disused gypsum quarry.
Whinleys Road Woodland	630 m southwest	A noteworthy woodland
Hutchinsons Holt	725 m south	A belt of unmanaged woodland with a dense understorey.
North Wheatley Beck	955 m northwest	A stream of interest for water beetles.
Cowsland Stripe	1.2 km southwest	Roadside strip of woodland with a notable flora.
Bole Ings	1.2 km north	An old Trent oxbow with a good diversity of semi-natural habitat types - of botanical and zoological interest.
Coates Wetland	1.3 km southeast	A group of pools with rough grazing land and a section of the River Trent, providing an area of zoological and botanical interest.
Hangingside and Hollinhill Lanes	1.5 km west	Trackside verges that are rich in herbs.
Bole Ings Drains	1.6 km north	Drains with a notable aquatic flora and of interest for water beetles
Broad Lane Grassland, North Leverton	1.6 km south	A neutral grassland cut for hay.
Cow Pasture Lane Drains	1.8 km south	Drains with notable aquatic and bankside vegetation.
Chesterfield Canal (Welham to Misterton)	1.9 km west	A representative stretch of canal supporting a nationally notable aquatic plant community characteristic of brackish waters, and a rich invertebrate.
<i>Lincolnshire LWS and Ancient woodlands</i>		
Burton Wood ASNW and PAWS	1.3 km east	The woodland listed on Natural England's Ancient Woodland Inventory datasets.

Site Name and Designation	Distance from Site	Feature(s) of interest
Trent Port Wetland LWS	1.5 km southeast	Selected for its mosaic of botanically rich damp grassland/marsh/fen, and standing water/pond.

- 3.8 The Blue Stocking Lane, Clarborough LWS is within the western mitigation area of the Site. During a field visit on 19 July 2024, the LWS was found to comprise species-rich grassland (other neutral grassland). The grassland had lower diversity in the south of the LWS compared to sections with wider verges. This is likely to be from the blackthorn scrub which is more predominant in the sward (26-33% cover). The scrub appeared to have 1-2 seasons of growth, indicating that the sward may not have been cut within the last year.
- 3.9 High House Road Verges, Sturton le Steeple LWS was found to have lower species diversity in the centre of the LWS (6 vascular plant species per m<sup>2</sup>) compared to the west and eastern ends (9 and 12 species per m<sup>2</sup> respectively). The verges appeared to be subject to homogenous management across the LWS but have different slopes/topology across their length. An area of wide verge to the east of the LWS, on the opposite side of the railway, was found to have similar species richness (11 species per m<sup>2</sup>) and floristic interest (ca. 30-40% cover of forbs such as red bartsia *Odontites vernus*, meadow vetchling, common knapweed, smooth tare *Ervum tetraspermum*) but is not within the LWS boundary.
- 3.10 Mother Drain, Upper Ings LWS was surveyed for its invertebrate assemblage on 06 June 2024 (refer to Appendix 7K: Aquatic invertebrates), and the results will be provided within the Environmental Statement. During these surveys, the drain was noted as having the following vegetation: common water-starwort *Callitriche stagnalis*, reed sweet-grass *Glyceria maxima*, reed canary-grass *Phalaris arundinacea*, great willowherb *Epilobium hirsutum*, watercress *Nasturtium officinale* agg., Canadian waterweed *Elodea canadensis*, meadowsweet *Filipendula ulmaria*, pink water-speedwell *Veronica catenata*. Algae was also present across the channel bed and water surface. The assemblage of aquatic plants was less than 10 species per 20m section. Water depth was up to 65 cm (generally <50cm) with a further 10cm of silt deposit.
- 3.11 Thornhill Lane Drain, Littleborough LWS was also assessed for its invertebrate assemblage on 06 June 2024, with results to be provided within the Environmental Statement. In terms of the vegetation, the channel was found to support meadowsweet, reed canary-grass, false fox-sedge *Carex otrubae*, soft-rush *Juncus effusus*, floating sweet-grass *Glyceria fluitans*, fool's watercress *Helosciadium nodiflorum*, various-leaved water-starwort *Callitriche platycarpa*, common water-starwort, pink water-speedwell, and common duckweed *Lemna minor*. In addition, during the April 2024 water vole surveys, Linton's pondweed *Potamogeton friesii x crispus* = *P. x lintonii* was identified, which was last recorded in the Site in the 1980s (according to the NBGRC). However, the species richness of aquatic plants was assessed to be less than 10 species per 20m section. Water depth was less than 30cm.
- 3.12 Littleborough Lagoons LWS is cited for its flora and bird interest. Detailed botanical assessment of the lagoon has not yet been undertaken as part of the Proposed Development, but it was noted that aquatic flora was not abundant March 2024 (appearing to have died back), possibly as a result of recent flooding that was estimated to overtop the lagoon banks by up to 2 m (based on the height of flood debris on nearby railings and scrub). The following emergent plants were visible from the banks during the July 2024 walkovers: bulbous rush *Juncus bulbosus*, water plantain *Alisma plantago-aquatica*, common spike-rush *Eleocharis palustris*, reed sweet-grass, water mint *Mentha aquatica*. Mature and young Willow *Salix* spp. and hawthorn *Crataegus monogyna* were growing along the banks, predominantly in the northern half of the lagoon. The southern banks are open with little cover for wetland birds. The remains of a swan (species not identified) were observed on the banks of the lagoon 19 March 2024. Further details of the bird assemblage are provided in Appendix 7D: Breeding bird report, Appendix 7.6: Wintering bird report.

### Summary of key points

- 3.13 The Site does not coincide with any internationally or nationally statutory designated sites. The closest nationally designated site is Clarborough Tunnel SSSI, which is 40 m southwest of part of the Site that forms the Western Biodiversity Mitigation Area. The SSSI was assessed to be in

unfavourable-recovering condition in 2011 (Natural England, 2024) and a field visit in July 2024 found that the SSSI includes ca. 0.8 ha of grassland with a diversity of 12 species per m<sup>2</sup>. The grassland is grazed by sheep and also has some damage from public access (recent campfire). It is not anticipated that significant volumes of hay or seeds could be harvested from the grasslands at Clarborough Tunnel SSSI for re-use at the Steeple Renewables Project.

- 3.14 Further consideration of internationally or nationally designated statutory sites will be given in report to inform a Habitats Regulations Assessment, which will be provided as part of the application process. All other statutory designated sites are a significant distance from the Site and are not considered to be in the Zone of Influence of the Proposed Development.
- 3.15 Five LWS intersect the Site. Four of these relate to the biodiversity mitigation areas. The LWSs are cited for their aquatic invertebrate interest, botanical interest, or bird interest. The Blue Stocking Lane, Clarborough LWS is cited for its grassland; these were confirmed via survey to be species-rich, but it was noted that some areas of lower diversity occurred in the south of the LWS, where hawthorn and blackthorn scrub were encroaching. The grassland may benefit from increased cutting frequency to ensure that scrub encroachment is controlled.
- 3.16 High House Road Verges, Sturton le Steeple LWS is cited for its grass verges but was found to have low species diversity in places. The verges currently appear to be subject to homogenous cuts, with fairly low diversity of forbs. Alteration to the cutting regime, including removal of arisings and variation in cut height, may increase the species richness. An area of species-rich grassland was identified to the east of the railway line, as a continuation of the track verges, but are not currently within the LWS boundary.
- 3.17 Mother Drain, Upper Ings, LWS and Thornhill Lane Drain, Littleborough LWS are within the eastern Biodiversity Mitigation Area and cited for their aquatic invertebrate interest. The invertebrate assemblage is not yet reported, but the drains were found to have relatively low water levels, with Mother drain including invasive non-native species (Canadian waterweed) and high cover of algae. Both drains were found to have moderate diversity of aquatic plants (<10 species per 20m section).
- 3.18 Littleborough Lagoons LWS is also in the Eastern Biodiversity Mitigation Area. It is cited for its botanical and bird interests. The lagoon is regularly flooded by the River Trent, which may introduce nutrients and seeds from offsite. Scrub is present along the northern banks of the lagoon, but there is little scrub cover in the south.

## 4 References

CIEEM (2018) *Guidelines for ecological impact assessments in the UK and Northern Ireland*, third edition. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

Defra (2024) *MAGiC Map Application* [online] Available at: <https://magic.defra.gov.uk/> Accessed 11 August 2024.

Natural England (2024) *Designated Sites View* [online] Available at <https://designatedsites.naturalengland.org.uk/> Accessed 11 August 2024.

## 5 Figures

Figure 7.2.1 Internationally Designated Sites of Nature Conservation

Figure 7.2.2 Nationally Designated Sites of Nature Conservation

Figure 7.2.3 Locally Designated Sites of Nature Conservation