

**The Great Grid Upgrade**

# Proposed Electricity Substation and Overhead Line Works at Weston Marsh

**Aquatic Survey Report**

June 2026

**nationalgrid**

# Proposed Electricity Substation and Overhead Line Works at Weston Marsh

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# 1. Introduction

## 1.1 Overview

- 1.1.1 This Aquatic Ecology Survey Report has been prepared on behalf of National Grid Electricity Transmission plc (National Grid).
- 1.1.2 National Grid are proposing to undertake works to construct a new electricity substation, new sections of overhead line and modification of existing overhead lines west of the Spalding Tee-Point, within the administrative boundary of South Holland District Council (SHDC) in Lincolnshire.

## 1.2 Summary of the Scheme

- 1.2.1 In totality, the Scheme consists of four components, each planned to be progressed via separate consenting routes. These are summarised in **Table 1.1**.

Table 1.1 Components of the Scheme

Works Required	Consenting Regime
Construction of the new Air Insulated Substation – 400kV Weston Marsh Substation A, associated landscaping and environmental mitigation works, drainage, highways and other associated works	Town and Country Planning Act 1990 (TCPA) (Ref 1) Component referred to as ' <b>Substation Works</b> '
Construction of new sections of overhead line to connect the new Substation Works into the existing 4ZM overhead line Removal of a section of the existing 4ZM overhead line Other associated works	Section 37 (S37) of the Electricity Act 1989 (Ref 2) and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990 Component referred to as ' <b>S37 4ZM Overhead Line Works</b> '
Construction of a new section of overhead line to connect the existing 2WS overhead line into the Substation Works. Removal of a section of the existing 2WS overhead line Other associated works	S37 of the Electricity Act 1989 and deemed consent pursuant to section 90(2) of the Town and Country Planning Act 1990 Component referred to as ' <b>S37 2WS Overhead Line Works</b> '
Reconductoring works required on the existing 4ZM overhead line Two spans of temporary overhead lines	The Town and Country Planning (General Permitted Development) (England) Order 2015 (Ref 3) and The Overhead Lines (Exemption) (England and Wales) Regulations 2009 (Ref 4) Component referred to as ' <b>Exempt Overhead Line Works</b> '

- 1.2.2 The Substation Works will require consent from SHDC under the TCPA.
- 1.2.3 The S37 4ZM Overhead Line Works and S37 2WS Overhead Line Works (collectively referred to as ‘S37 Overhead Line Works’) will require consent from the Secretary of State for Energy Security and Net Zero under S37 of the Electricity Act 1989 (Ref 2).
- 1.2.4 The Exempt Overhead Line Works constitute permitted development under Part 15 Class B of the Town and Country Planning (General Permitted Development) (England) Order 2015 (Ref 3) and The Overhead Lines (Exemption) (England and Wales) Regulations 2009 (Ref 4).
- 1.2.5 The Scheme Site Boundary, which consists of the land required to construct and operate the Scheme in its entirety, is illustrated on **Figure 1**. The areas of land required to construct and operate each individual component described in **Table 1.1** are also illustrated on **Figure 1**.
- 1.2.6 The Scheme in its totality is a standalone development to enable connection of the Outer Dowsing Offshore Wind Farm to the national electricity transmission system. Each component included in **Table 1.1** is required for the Scheme to fully function as part of the National Electricity Transmission System.

### 1.3 Purpose of this Report

- 1.3.1 The purpose of this report is to present the results of the aquatic ecology surveys (fish, macroinvertebrate and macrophyte) undertaken and to inform the ecology baseline for the Scheme.
- 1.3.2 This Aquatic Ecology Survey Report has been prepared in support of the necessary consent applications required to deliver the Scheme. It has been informed by engagement between National Grid and the relevant consenting authorities.
- 1.3.3 The aquatic ecology data has been collected across the Scheme Site Boundary in its entirety. However, the survey results in **Section 4** are presented in relation to each component of the Scheme as outline in **Table 1.1** . This approach enables the relevant consenting authority to readily identify and consider only those survey results that are associated with the application before them, whilst also maintaining a clear understanding of the Scheme in its wider context.
- 1.3.4 The objectives of this Report are to:
- 1) Outline the legislation and guidance relevant to fish, aquatic macrophytes and aquatic macroinvertebrates;
  - 2) present relative desk study information;
  - 3) provide species data and information on the aquatic macroinvertebrate, macrophyte and fish species and assemblages within the relevant area; and
  - 4) provide sufficient information to inform an assessment of potential impacts to aquatic species as a result of the Scheme.
- 1.3.5 The assessment of potential impacts to aquatic species and recommendation for mitigation (where required) is reported within the **Ecological Impact Assessment**.

## 2. Legislative and Policy Framework

### 2.1 Overview

2.1.1 Legislation and national and local planning policy relevant to the Scheme is described in the Planning, Design and Access Statement (TCPA application) and the Section 37 Statement (S37 applications). Key legislation and policy specifically relevant to aquatic ecology is summarised in the following sections.

### 2.2 Legislation and National Policy

#### The Conservation of Habitats and Species Regulations 2017 (the Habitat Regulations)

2.2.1 The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) (Ref 5) transposed the requirements of Directive 92/43/EEC of the Council of the European Communities of 21 May 1992 ("Habitats Directive") and Directive 2009/147/EC of the European Parliament and of the Council of the European Union (EU) of 30 November 2009 on the conservation of wild birds ('Birds Directive') into United Kingdom (UK) law and provide for the designation and protection of European Sites (and adapt planning and other controls for the protection of these sites). This includes Annex I (habitats) and Annex II (species) for which such European Sites can be designated.

2.2.2 The Habitats Regulations (Ref 5) also provide protection for certain European Protected Species that are listed on Schedule 2 (animals) or Schedule 5 (plants). Provision is made for the granting of licences that permit certain acts as lawful, providing the appropriate authority is satisfied that the permitted activities will be carried out for specified reasons or purposes, that there is no satisfactory alternative, and that the activities will not be detrimental to the maintenance of the species concerned at the favourable conservation status in their natural range.

2.2.3 Special Areas of Conservation (SAC) and Special Protection Areas (SPA) in the UK no longer form part of the EU's Natura 2000 ecological network, following the UK's exit from the EU. The Habitats Regulations ensure that the network of sites in the UK, that prior to EU Exit formed part of Natura 2000, now form part of the 'national site network' on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes existing SACs and SPAs and proposed, or new SACs and SPAs designated under these Regulations.

#### Regulation (EU) 1143/2014 of the European Parliament and of the Council on the prevention and management of the introduction and spread of invasive alien species

2.2.4 Following EU exit, the provisions of EU Regulation No 1143/2014 (Ref 6) were retained as UK law and amended to function independently of the European Union (pursuant to the Invasive Alien Species (Enforcement and Permitting) Order 2019/527). The Secretary of State may amend the (UK) list of species of Invasive Non-Native Species (INNS) whose adverse impact is such that concerted action in

required across Great Britain. The Regulation sets out requirements for risk assessments, the prohibition of specified activities in respect of INNS, arrangements for the taking of necessary steps to prevent the unintentional introduction or spread of INNS, the requirement for permits, authorisations and emergency measures and the management by the appropriate authority of widely spread INNS.

## **The Invasive Alien Species (Enforcement and Permitting) Order 2019**

- 2.2.5 The Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 7) came into effect on 1 December 2019. This gives effect to certain provisions of EU Regulation No 1143/2014 (Ref 6), in particular in respect of offences and the relevant licences, permits and rules in connection with INNS of special concern. INNS that are of special concern are subject to provisions of the Wildlife and Countryside Act 1981 (Ref 8).

## **Wildlife and Countryside Act 1981 (as amended) (WCA)**

- 2.2.6 The Wildlife and Countryside Act 1981 (WCA) (Ref 8) is a primary piece of UK wildlife legislation, protecting birds, other animals and plants (including vascular plants, bryophytes, lichens and fungi) and providing for the designation of protected areas including Sites of Special Scientific Interest (SSSI). It is an offence to cause the spread in the wild of any species listed under Schedule 9 of the WCA 1981 (Ref 8).

## **The Water Framework Directive (WFD; 2000/60/EC), later transcribed into UK Statutory Instruments as The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017**

- 2.2.7 The Water Environment Water Framework Directive (WFD) (England and Wales) Regulations 2017 (Ref 9) consolidate, revoke and replace the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (H.M Government, 2003). The 2017 Regulations place a general duty on the Secretary of State, the Welsh Ministers, the Environment Agency (EA) and Natural Resources Wales to exercise their relevant functions so as to secure compliance with the WFD (Regulation 3) (Ref 10).

## **Environment Act 2021**

- 2.2.8 The Environment Act 2021 (Ref 11) provides a post-Brexit legal framework for environmental governance and makes provision for improvements to the natural environment. It requires the Secretary of State to set long-term targets (15-year minimum) for biodiversity.

## **Environmental Protection Act 1990**

- 2.2.9 The Environmental Protection Act 1990 (Ref 12) makes provision for the control of pollution to the air, water and land by regulating the management of waste, the control of emissions and the identification and remediation of land posing unacceptable risks to human health and the environment.

## Natural Environment and Rural Communities (NERC) Act 2006

- 2.2.10 Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref 15) requires the Secretary of State to publish and maintain a list of habitats and species that are of Principal Importance for the purpose of conserving biodiversity, and are regarded as conservation priorities under the UK Post-2010 Biodiversity Framework (Joint Nature Conservation Committee (JNCC) on behalf of the Four Countries' Biodiversity Group, 2024).

## Salmon and Freshwater Fisheries Act 1975

- 2.2.11 The Salmon and Freshwater Fisheries Act 1975 (Ref 16) relates to the protection of freshwater fish, with a focus on salmon and trout species. It considers mortality, migration barriers, pollution and the degradation of habitats.

## The Eels (England and Wales) Regulations 2009

- 2.2.12 The Eels (England and Wales) Regulations 2009 (the Eel Regulations) (Ref 17) came into force on 15 January 2010 aiming to halt and reverse the decline in the European eel (*Anguilla Anguilla*) stock and meet mature adult eel biomass escapement targets to sea of 40% relative to that expected in the absence of anthropogenic impacts. Provisions are made for safe and unobstructed passage for eel, channel alterations, river crossings and culverting.

## National Planning Policy Framework

- 2.2.13 The National Planning Policy Framework (NPPF) (Ref 18) 2024 (amended February 2025) and is a material consideration for planning decisions. The Framework establishes a presumption in favour of sustainable development (paragraph 11) as its central principle and requires the planning system to pursue three mutually supportive overarching objectives (economic, social and environmental objectives (paragraph 8)).
- 2.2.14 Chapter 15 of the NPPF is directly relevant to the receptors identified within this report. Paragraph 187 requires planning policies and decisions to protect and enhance sites of biodiversity value and to minimise impacts on valued habitats and species. Paragraph 193 establishes the key decision-making principles when determining planning applications. These include: where significant harm to biodiversity resulting from a development cannot be avoided through alternative siting, adequately mitigated, or as a last resort compensated for, planning permission should be refused.

## 2.3 Regional and Local Policy

- 2.3.1 Regional and local plans or policies relevant to this report are as follows:

- 1) South Holland District (Lincolnshire): South East Lincolnshire Local Plan 2011-2036 (Ref 19):
  - a) Policy 28 The Natural Environment: supports protecting, managing and enhancing a high quality, comprehensive ecological network of interconnected designated sites, sites of nature conservation importance and wildlife-friendly greenspace; and

- b) Policy 31 Climate Change and Renewable and Low Carbon Energy: notes that all development proposals will be required to demonstrate that the consequences of current climate change have been addressed, minimised and mitigated by (amongst other measures) incorporating measures which promote and enhance green infrastructure and provide an overall net gain in biodiversity. This policy also stipulates that the development of renewable energy facilities and associated infrastructure will be permitted provided that individually or cumulatively, there would be no significant harm to the natural environment.

2) Lincolnshire Local Biodiversity Action Plan 2011 (Ref 20);

Local Biodiversity Action Plans (LBAP) are a means for delivering UK BAP targets at a local level. The proposed developed is located within the area covered by the Lincolnshire Biodiversity Action Plan. This Plan aims to:

- a) Conserve and enhance Lincolnshire's biodiversity; recreating habitats on a landscape scale and developing networks of interlinked natural areas – a 'living landscape' of which wildlife is an integral part, not confined to specially protected sites;
- b) Ensure that biodiversity is recognised as an essential element of life in the historic county of Lincolnshire: including its contributions to health and wellbeing; the economy, recreation and tourism; and provision of ecosystem services (such as flood protection, retention of water resources, carbon storage and crop pollination);
- c) Ensure biodiversity conservation is sustainable; the benefits are felt by society, the economy and the environment; and
- d) Provide and gather biodiversity information to monitor progress and enable individuals and organisations to make decisions based on sound evidence.

# 3. Methodology

3.1.1 The methodology adheres to the following guidelines:

- 1) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, Version 1.3 (Chartered Institute of Ecology and Environmental Management (CIEEM), 2024) (Ref 22). The aim of the Guidelines is to:
  - a) promote good practice;
  - b) promote a scientifically rigorous and transparent approach to Ecological Impact Assessment (EclA);
  - c) provide a common framework to EclA in order to promote better communication and closer cooperation between ecologists involved in EclA;
  - d) provide decision-makers with relevant information about the likely ecological effects of a project; and
  - e) The baseline conditions for each ecological feature should be described clearly, objectively and succinctly, using figures and plans where necessary. Where an extensive amount of survey data has been generated, this can be provided as appendices.
- 2) Advice note on the lifespan of ecological reports and surveys (Ref 23) provides the following guidelines:
  - a) Where data is less than 12 months old, this data is likely to be valid in most cases; and
  - b) Where data is 12 – 18 months old, data is likely to be valid with the following exceptions:
    - i. Where a site may offer existing or new features which could be utilised by a mobile species within a short timeframe;
    - ii. Where a mobile species is present on site or in the wider area, and can create new features of relevance to the assessment; and
    - iii. Where country-specific or species-specific guidance dictates otherwise. Report authors should highlight where they consider it likely to be necessary to update surveys within a timeframe of less than 18 months.
  - c) Where data is 18 month to three years a professional ecologist will need to undertake a site visit and may also need to update desk study information (effectively updating the Preliminary Ecological Appraisal) and then review the validity of the report, based on a number of factors such as the validity of the report.
  - d) If data is older than three years, then the report is unlikely to be valid and surveys will need to be repeated.

## 3.2 Scope

- 3.2.1 The scope of aquatic ecology survey has been determined in accordance with relevant industry guidance referenced above, and is considered appropriate in order to assess potential effects arising from the Scheme.
- 3.2.2 The aim of this report is to determine the presence or absence of freshwater aquatic species within the Zone of Influence (Zol) (defined below).
- 3.2.3 Within this report, the following terminology is used when referring to the geographic areas within which the surveys were conducted:
- 1) Study Area (illustrated on **Figure 1**) – the area within the Scheme Site Boundary (which consists of the works required to construct and operate the Scheme in its totality), and a 2 km radius of it, which was subject to collection of background information e.g. desk study records of aquatic receptors, to supplement the findings of survey work;
  - 2) Zol – the area over which aquatic receptors may be affected by the Scheme which is based on professional judgement and using the following criteria (likely to be 2 km from the Scheme Site Boundary):
    - a) The nature of the Scheme (substation and pylons with associated works), associated Scheme activities and the potential for effects on aquatic receptors at all development stages (construction, operational (including maintenance) and decommissioning);
    - b) the nature of the aquatic habitats in the vicinity of the Scheme and their connectivity for aquatic receptors; and
    - c) habitats, behaviours and preferences of different species or species groups and whether these could be affected both spatially and temporally.
- 3.2.4 All designated sites, sensitive habitats, and protected and notable species that occur within the ecological Zol of the Scheme Site Boundary have been considered in this report.
- 3.2.5 The objectives of this report and the baseline gathering activities that inform it are to:
- 1) Review existing ecological data to identify any records of aquatic species within the Study Area (see **Section 4.1** of this report); and
  - 2) Undertake surveys to identify the presence of aquatic species within the Survey Area (see **Section 4.2** of this report). The scope of the surveys included:
    - a) Aquatic scoping surveys;
    - b) aquatic macrophyte surveys;
    - c) aquatic macroinvertebrate surveys; and
    - d) fish surveys.
- 3.2.6 This report also identifies several INNS which could potentially be spread during the Scheme's construction, operational and decommissioning phases.
- 3.2.7 Together, this information is being used to:
- 1) Determine the biodiversity importance of The Scheme for aquatic species;

- 2) Inform the **Ecological Impact Assessment** which identifies the potential impacts of the Substation Works on aquatic species, as well as any required mitigation; and
- 3) Inform the Environmental Appraisal Reports submitted in support of the applications for S37 consent for the S37 Overhead Line Works.

### 3.3 Data Collection

#### Desk Study

- 3.3.1 A desk study was conducted to identify water bodies, designated sites, habitats of principal importance, any INNS and protected, notable species of fish, aquatic macroinvertebrates and macrophytes within the Study Area.
- 3.3.2 Data were collated and searched through a desk study, based on the typical maximum distances expected by statutory consultees and consistent with similar developments of this extent.
- 3.3.3 Designated sites within the Study Area were screened using the Multi Agency Geographic Information for the Countryside (MAGIC) website (Ref 24) and using data provided by the Local Environmental Records Centre (LERC) obtained in January 2024, following the below criteria. All distances are measured from the Scheme Site Boundary:
  - 1) 10 km for statutory designated sites of international nature conservation value with aquatic interest (SACs and SPAs) and Wetlands of International Importance that have been designed under the criteria of the Ramsar Convention of Wetlands (Ramsar), as well as proposed or potential sites);
  - 2) 5 km for statutory designated sites of national nature conservation value with aquatic interest e.g. SSSIs, National Nature Reserves (NNRs) or local level (e.g. Local Nature Reserves (LNRs));
  - 3) 2 km for non-statutory sites designated for their biodiversity value e.g. Local Wildlife Sites (LWSs), Sites of Importance for Nature Conservation; and
  - 4) 2 km for WFD water bodies.
- 3.3.4 An additional search for priority migratory fish species was conducted for the wider catchment surrounding the Scheme, to identify any priority species that could exist within 2 km of the Scheme, but were not already identified within those 2 km.
- 3.3.5 A desk-based review of the WFD water body information and aquatic ecology receptors was conducted, identifying ditches and watercourses that could be impacted by the Scheme. This included reviews of:
  - 1) The current WFD status of water bodies by utilising the Catchment Data Explorer website (Ref 25) maintained by the EA to determine each water body's conservation value within proximity to the Scheme;
  - 2) Records of statutory designated sites, non-statutory designated sites, protected and INNS which were acquired via searching the Department for Environment Food and Rural Affairs' (DEFRA) MAGIC interactive map (Ref 24) alongside from LERC including the Greater Lincolnshire Nature Partnerships (GLNP),

Cambridgeshire & Peterborough Environmental Records Centre (CPERC), and the Norfolk Biodiversity Information Service (NBIS);

- 3) Commercially available aquatic ecological monitoring data from the last 10 years for macroinvertebrates, macrophytes and fish (including INNS) were acquired from the Ecology & Fish Data Explorer (Ref 26), the National Biodiversity Network (NBN) data atlas (Ref 27) database, and the GLNP, CPERC, and NBIS databases. To identify notable species within 2 km of the Scheme, taxa population data was downloaded from the named databases and using QGIS, a 2 km buffer was created around a polygon shapefile of the Scheme to clip the taxa population data. Additional priority migratory species were identified in the wider catchment by identifying the wider catchment that the Scheme is surrounded by and clipping bulk National Fish Populations Database (NFPD) and Transitional & coastal water fish surveys (TraC) data by the catchment (e.g. the River Welland) and identifying which data was recorded upstream and downstream of a 2 km area surrounding the Scheme Site Boundary; and
- 4) Commercially available crayfish records via data downloaded from the listed databases.

## 3.1 Scoping and Site Selection for Aquatic Ecology Surveys

### Preliminary Scoping Rationale

- 3.1.1 Specific survey locations within the Scheme were selected based on their potential to be affected by the Scheme, for example any watercourses where a watercourse crossing or diversion may be required, or with the potential to be impacted by runoff or outfalls during construction, operation and decommissioning phases.

### Site Survey

- 3.1.2 Aquatic scoping surveys were completed over winter 2024/2025. A total of 27 watercourses were visited throughout the survey effort for the Study Area. The results of these surveys in combination with data and photographs from a range of other surveys conducted in winter 2024/2025 (UK Habitat Classification, great crested newt, water vole) and additional aerial imagery, allowed the Scheme survey effort to be refined. The survey locations assessed within this report were evaluated based on their overall quality in terms of water quantity/quality (e.g. depth and whether they are ephemeral), hydromorphological features (e.g. channel morphology, substrate, and flow types) and the surrounding riparian environment. Those considered suitable for supporting notable species or communities were scoped in for taxa-specific surveys to determine their conservation value and establish a baseline.
- 3.1.3 A preliminary examination of all crossing points, diversions and proposed outfall locations was performed to scope out any ditches that were considered to be dry for the majority of the year and would therefore be unsuitable habitat for aquatic receptors. The remaining watercourses were then examined by the species leads for fish, macroinvertebrates and macrophytes in order to focus survey effort to suitable habitat for each discipline.
- 3.1.4 It was found that many of the ditches within the Study Area were dry, even in winter, and were devoid of aquatic macrophyte growth, which rendered them unsuitable

habitat for fish, macroinvertebrate and macrophyte survey effort. Such ditches had growth of terrestrial plants which would not tolerate submergence in surface water, so it was safe to presume the ditches only temporarily convey water following periods of high precipitation.

- 3.1.5 In instances where previous survey data was lacking, aerial imagery was used in combination with survey data from similar nearby ditches to assess the likelihood of the ditch holding water for sufficient periods for aquatic receptors. Where there was any ambiguity, the ditch was scoped in for survey.
- 3.1.6 A total of 18 overhead line (OHL) crossings and 11 watercourse crossings locations are proposed (illustrated on **Figure 8**). Habitat appraisals were completed at 14 locations where it was considered that there could be potential impacts to aquatic habitats. Of those surveyed, ten were scoped out for further surveys. These sites and reasoning for descopeing are shown in **Table 3.1**. Images of these scoped out sites are presented in **Appendix A**. Crossing points were scoped out for further aquatic surveys due to the relatively dry nature of the surrounding landscape, only four crossing points were scoped in for further aquatic ecology surveys. The crossing points scoped in for survey are presented in **Table 3.2**. It was considered that crossing points WM-WCX-3 and WM-WCX-19 were not suitable for fish surveys due to their ephemeral nature and poor habitat for fish observed from the scoping surveys. Crossing point TCPA-OHL-WCX-4 (River Welland) was also descopeed from fish surveys due to unsafe access into this tidal section of river and available desk study data to inform the baseline.

**Table 3.1** Crossing points scoped out for further aquatic surveys

<b>Crossing Point ID</b>	<b>National Grid Reference</b>	<b>Type of Watercourse</b>	<b>Reason for scoping out</b>
WM-WCX-1	TF 28809 29991	Ditch	Ditch was dry.
WM-WCX-1a	TF 29425 29030	Ditch	Ditch was dry.
TCPA-OHL-WCX-7 & 8	TF 29546 29032 & TF 29590 29049	Ditch	Ditch was too steep to safely access.
TCPA-OHL-WCX-17	TF 30175 28207	Ditch	Ditch was dry.
TCPA-OHL-WCX-18	TF 30389 27924	Ditch	Ditch was dry.
TCPA-OHL-WCX-13	TF 29710 28058	Ditch	Ditch was dry.
TCPA-OHL-WCX-12 & WM-WCX-7	TF 29653 28044	Ditch	Ditch was dry.
WM-WCX-18	TF 29248 27064	Ditch	Ditch was dry.
WM-WCX-20	TF 29095 26363	Ditch	Ditch retained water too shallow and fragmented to survey.

Table 3.2 Crossing points surveyed for fish, macroinvertebrates and macrophytes

Crossing Point ID	National Grid Reference	Type of Watercourse	Surveys scoped in	Proposed Works
TCPA-OHL-WCX-4	TF 28702 30144	Main River (Welland)	Fish, macroinvertebrates and macrophytes	Overhead Line
WM-WCX-3	TF 29465 28407 & TF 29492 28366	Ordinary Watercourse	Macroinvertebrates and macrophytes	Closed culvert and water course diversion due to substation positioning. Outfall location.
TCPA-OHL-WCX-15 & 16	TF 30100 28305 & TF 30103 28326	Ordinary Watercourse (Lords Drain)	Fish, macroinvertebrates and macrophytes	Closed culvert and outfall location
WM-WCX-19	TF 29147 26749	Ordinary Watercourse (Lords Drain)	Macroinvertebrates and macrophytes	Closed culvert

## 3.2 Macroinvertebrate Survey Methodology

3.2.1 The macroinvertebrate survey method followed aquatic macroinvertebrate sampling procedures standardised by the EA (Ref 28), which conforms to BS EN ISO 10870:2012 Water Quality – Guidelines for the selection of sampling methods and devices for benthic macroinvertebrates in fresh waters. These methods allow characterisation of aquatic macroinvertebrate communities and can be used to determine whether rare or notable species or communities are present. Samples were collected using a standard Freshwater Biological Association pattern pond net (mesh size: 1 mm). Present habitats were sampled through a combination of kick sampling and sweep sampling for three minutes followed by a one-minute hand search of larger substrates in accordance with standard methods. Samples collected were subsequently preserved in Industrial Methylated Spirit prior to laboratory processing.

3.2.2 Each of the samples collected was sorted and analysed in a laboratory by suitably trained and experienced aquatic ecologists. Lists of the aquatic macroinvertebrate taxa present were produced in line with EA guidance (Ref 29). Aquatic macroinvertebrate samples were identified to mixed-taxon level using a stereo-microscope. Most groups were identified to species level (where practicable), except for the following:

- 1) worms (*Oligochaeta*) which were identified to sub-class;
- 2) pea mussels (*Pisidium/Odhnerpisidium/Euglesa*) sp. which were identified to genus-group;
- 3) marsh beetles (*Scirtidae*) which were identified to family;
- 4) true-fly larvae, which were identified to the maximum resolution possible; and

5) immature or damaged specimens, which were identified to the maximum resolution possible on a case-by-case basis.

3.2.3 Macroinvertebrate taxa and abundances were then used to calculate the following metrics that can be used to inform an assessment of relative nature conservation value and general degradation.

### Community Conservation Index (CCI)

3.2.4 A Community Conservation Index (CCI) (Ref 30) was calculated for each reach. The CCI classifies many groups of aquatic macroinvertebrates according to their scarcity and nature conservation value in England as understood at the time that the classification was developed. Species scores range from 1 to 10, with 1 being very common and 10 being endangered. Since its initial publication, in some cases the references used in the CCI classification to define scarcity and value have been superseded by more recent assessments. Due to this, the EA has provided AECOM with updated species scores to take account of this new information (EA, pers. comm., 2022). These updated scores have been used within this report.

### Lotic-invertebrate Index for Flow Evaluation (LIFE)

3.2.5 Lotic-invertebrate Index for Flow Evaluation (LIFE) scores were calculated (Ref 31). This is an index that links benthic macroinvertebrate data to flow regimes prevailing in UK waters. Flow scores have been allocated to various macroinvertebrates based on species/family abundance and ecological association with different flows. The overall LIFE score for a site is calculated as the sum of the individual scores divided by the number of scoring species/families. LIFE scores increase with current velocity, scores <6.00 generally indicating sluggish or still water conditions and score >7.5 indicate fast flows. LIFE allows the mean flow preference of invertebrates colonising a site to be determined so that effect of habitat changes such as sediment accumulation can be monitored.

### Proportion of Sediment-sensitive Invertebrates (PSI)

3.2.6 Calculations were undertaken to determine the proportion of sediment sensitive macroinvertebrates present using the Proportion of Sediment-sensitive Invertebrates (PSI) index (Ref 32). Using this approach, individual taxa of aquatic macroinvertebrate are assigned a Fine Sediment Sensitivity Rating ranging from A to D. The PSI score for each aquatic macroinvertebrate sample was derived from individual species scores and abundances. The derived PSI score corresponds to the percentage of fine sediment-sensitive taxa present in a sample and ranges from 0 to 100, where low scores correspond to watercourses with high fine sediment cover. The PSI score therefore provides an indication of the extent to which watercourses are influenced by fine sediments, and therefore by inference the potential sensitivity of the associated aquatic macroinvertebrate community to changes in silt load and deposition.

### Whalley, Hawkes, Paisley & Trigg (WHPT)

3.2.7 The aquatic macroinvertebrate data were analysed to generate the Whalley, Hawkes, Paisley & Trigg (WHPT) score Average Score Per Taxon (ASPT), and Number of Scoring Taxa values, which provides an indication of the ecological quality in the

watercourse (Ref 34). This assigns numerical value to taxa according to their sensitivity to organic pollution. The average of the values for each taxon in a sample, known as ASPT is a stable and reliable index of organic pollution. Therefore, these assessments can indicate to what extent an aquatic macroinvertebrate community is exposed to organic pollution. It is important to note that these indices can vary between geological regions and habitat types. Ditches for example are unable to support many of the high-scoring taxa associated with fast flowing habitats. Therefore, the resultant metrics should be reviewed with an awareness of their potential limitations, and the reach-specific context, as described in this report.

3.2.8 The WHPT method has been primarily designed to respond to organic pollution, however it is suitable for monitoring other types of impact and is used for assessing the WFD classification parameter “General degradation” (Ref 34).

### 3.3 Macrophyte Survey Methodology

3.3.1 The guidance for the survey of aquatic macrophytes follows the standardised methods described in the River Macrophytes UK Technical Advisory Group (UKTAG) Method Statement (Ref 35) which conforms to BS EN 14184:2014 Water quality - Guidance for the surveying of aquatic macrophytes in running waters (Ref 32).

3.3.2 Macrophyte surveys were undertaken during summer 2025 which is the optimal survey season (between the beginning of June and end of September).

3.3.3 A water sample is collected for analysis of alkalinity in a laboratory alongside physical features of the channel, including depth, width, substrate, odour, turbidity, water colour, shade, water flow, bed stability, water velocity, hydrological features, and modifications / pressures to the watercourse, were recorded.

3.3.4 Standard macrophyte surveys consist of a survey of a continuous 100 m length of waterbody. Surveying should establish the presence and percentage cover of the river channel (up to the height of bank that would typically be submerged for >50% of the year) by any of the macrophyte taxa listed in Appendix A of the River Macrophytes UKTAG Method Statement.

3.3.5 A list of all macrophytes encountered was collated and their relative abundance was recorded using Taxon Cover Values (TCV), detailed in **Table 3.3**.

Table 3.3 TCV and their associated percentage cover

TCV	Percentage cover for the macrophyte taxon
C1	<0.1%
C2	0.1 to 1%
C3	1 to 2.5%
C4	2.5 to 5%
C5	5 to 10%
C6	10 to 25%
C7	25 to 50%

TCV	Percentage cover for the macrophyte taxon
C8	50 to 75%
C9	>75%

## 3.4 Fish Survey Methodology

### Electric Fishing Surveys

- 3.4.1 One electric fishing survey was undertaken during the winter survey season in February 2026 at crossing point TCPA-OHL-WCX-15 & 16. This date allowed for survey completion prior to the coarse fish spawning close season. Although, the surveys took place during the close season for salmonids, local EA records do not indicate the presence of salmonids, and it was deemed suitable to survey at this time. Although crossing point TCPA-OHL-WCX-4 was also scoped in for fish, fish surveys could not be completed here due to site limitations. Please refer to the **Section 3.5** of this report for further information on assumptions and limitations.
- 3.4.2 Electric fishing surveys were undertaken following a derivation of the standard electric fishing practice for operators and equipment, as detailed in the Environment Agency Code of Practice and Electric Fishing Equipment Annex A and B, Issue II regulations revision (Ref 36). Electric fishing was conducted by fully trained fisheries scientists following the EA Operational Instruction 993\_08, Electric fishing operations (Ref 37) and British Standards Guides (Ref 38 and Ref 39).
- 3.4.3 Quantitative surveys require at least three depletive runs of a watercourse, sectioned off with stop nets. This survey method allows for the enumeration of stock within the survey site. Where suitable, these surveys were undertaken by assessing the fish population within a 100 m reach isolated using cross channel stop nets where possible, fishing in an upstream direction.
- 3.4.4 As site conditions at Lord's Drain did not allow for a quantitative survey, due to steep banks and unstable substrates, a semi quantitative survey was undertaken. Semi-quantitative surveys require one run of depletive electric fishing to give a good indication of population densities of species present. This survey method was completed in an upstream direction and completed over a ~100 m reach.
- 3.4.5 The equipment used for the electric fishing survey consisted of a Honda portable generator (220/240V) adapted for electric fishing with a built-in control system (DC converter), a single anode on long lead (50 m), a cathode and hand nets to capture fish.
- 3.4.6 Prior to survey commencement, select physiochemical parameters of the water (water temperature (°C), pH, dissolved oxygen (% and mg/l), and specific conductivity (µS/cm)) were measured. This informed the surveyors of the appropriate electric fishing settings to use, based on current conductivity levels. Surveyors electric fished the watercourse in an upstream direction, following methods set out in the above protocols.
- 3.4.7 Following capture, the fish were placed within aerated fish holding tanks before being identified, measured and safely released immediately downstream of stop nets. Any eels caught would be kept in a separate tank to other fish species as they secrete

mucus which can clog the gills of other fish. Holding tank dissolved oxygen levels were continuously monitored and maintained at optimal conditions using an aerator.

3.4.8 All aquatic ecology survey locations are shown in **Figure 4** to **Figure 7**.

## **3.5 Assumptions and Limitations**

3.5.1 The findings presented in this study represent those at the time of survey and reporting, and data collected from available sources.

### **Macroinvertebrates**

3.5.2 Macroinvertebrate surveys at crossing point TCPA-OHL-WCX-4 on the River Welland could not be undertaken due to health and safety concerns accessing the watercourse. The banks were wide and composed of deep soft silts, which made it too unsafe to access by foot. Therefore, WFD survey data from the EA has been used.

3.5.3 Many of the watercourses scoped in for survey were agricultural drainage ditches with steep-sided banks and soft silt substrate. 'Sweep sampling' was undertaken on most watercourses due to safety considerations. This is generally considered to be suboptimal compared to 'kick sampling', however this is still a recognised collection method (Ref 28), and as such it is not considered a significant limitation.

### **Macrophytes**

3.5.4 Macrophyte surveys were completed on crossing points WM-WCX-3/ TCPA-OHL-WCX-10 & 11/ TCPA-OHL-WCX-15 & 16/ WM-WCX-19; however, survey data was lost due to a software upload error and is no longer available. These sites will be re-surveyed in June 2026.

3.5.5 While survey data is no longer available, it was confirmed that no notable species were encountered at these sites, as rare or notable species would have been recorded photographically independent of the survey proforma by the surveyor. It is, however, possible that macrophyte INNS may be present at some of these sites.

## **3.6 Fish**

3.6.1 Electric fishing or eDNA surveys on the River Welland (crossing point TCPA-OHL-WCX-4) were not feasible due to the wide and silty banks and tidal nature of the river at the crossing point location. It was not possible to safely access the water or complete surveys that would have provided appropriate data. For this site, WFD survey data from the EA was used to inform the baseline.

3.6.2 The survey at Lord's Drain (crossing point TCPA-OHL-WCX-15 & 16) was limited by access due to steep banks and safety of deploying surveyors and field equipment. A suitable location was found on a slight bend ~900m downstream of the crossing point. Due to the proximity of the drain to the River Welland there was some saline influence as demonstrated by the high conductivity recordings. Semi-quantitative surveys were used as steep banks made stop nets unsafe for use, these are considered sub-optimal due to electric fishing conditions which could potentially allow some fish to avoid capture; however a single run was completed successfully, and the data is deemed representative of the fish assemblage in the drain.

# 4. Results

## 4.1 Desk Study

4.1.1 The results of the desk study in the Study Area are presented below, including information on WFD status, designated sites, and notable species records for macroinvertebrates, crayfish, macrophytes, and fish, including non-native species.

### Designated Sites

#### International Statutory Sites

4.1.2 Statutory international designated sites within 10 km of the Scheme were identified from online data searches. A total of four statutory international designated sites were identified, as listed in **Table 4.1**. However, only two of these statutory designated sites included aquatic ecology features as part of the reason for their designation (The Wash Ramsar and The Wash and Norfolk Coast SAC). **Figure 2** shows the location of international statutory designated sites in relation to the Scheme Site Boundary.

Table 4.1 International statutory designated sites within 10 km the Scheme.

Name	Reason for Designation (aquatic features)	Central National Grid Reference	Distance from the Scheme (km)
The Wash Ramsar	The Wash consists of a large, shallow bay including major intertidal mud and sand banks, numerous saltmarshes, deep and shallow water channels. Site met designation criteria three, due to the relationship between saltmarshes, estuarine waters and intertidal sand/mud flats. The plankton of estuarine water and saltmarshes also provide a major primary source of organic matter forming the base of the high productivity system of the estuary. Designation criteria five was also met, being home to waterfowl individuals reaching 320,673 and include nationally and internationally important bird numbers of various species. Criteria six was met following identification of various bird species, including Eurasian oystercatcher ( <i>Haematopus ostralegus</i> ), grey plover ( <i>Pluvialis squatarola</i> ), and sanderling ( <i>Calidris alba</i> ) in spring/autumn, and pink-footed goose, ( <i>Anser brachyrhynchus</i> ), dark-bellied brent goose ( <i>Branta bernicla</i> ) and northern pintail ( <i>Anas acuta</i> ) in winter.	TF 33950 33560	5.6 km north east of the Scheme Site Boundary

Name	Reason for Designation (aquatic features)	Central National Grid Reference	Distance from the Scheme (km)
The Wash and Norfolk Coast SAC	<p>Provides key Annex I habitats, including sublittoral and subtidal sandbanks of varying sediment grain sizes, supporting beds of brittlestar (<i>Ophiothrix fragilis</i>), sand-mason worms (<i>Lanice conchilega</i>), tellin (<i>Angulus tenuis</i>), plaice (<i>Pleuronectes platessa</i>), cod (<i>Gadus morhua</i>) and sole (<i>Solea solea</i>). It also includes soft mudflats sheltered by barrier beaches and islands supporting polychaetes, bivalves, and crustaceans, alongside varieties of eelgrass (<i>Zostera</i> spp.).</p> <p>Large shallow inlets and bays exist, supporting similar species as above and provide habitat for the largest colony of common seals (<i>Phoca vitulina</i>), comprising 7% of the UK population. There are critical reef habitats home to tube-dwelling polychaetes (<i>Sabellaria spinulosa</i>), the pink shrimp (<i>Pandalus montagui</i>), and crabs. The north Norfolk coast is also one of the few UK regions where Mediterranean and thermos-Atlantic halophilous scrubs (<i>Sarcornetea fruticose</i>) dominate, such as shrubby sea-blite (<i>Suaeda vera</i>) and sea-purslane (<i>Atriplex portulacoides</i>). Annex II species, such as the otter (<i>Lutra lutra</i>) reside along this region, too.</p>	TF 33950 33560	5.6 km north east of the Scheme Site Boundary
The Wash SPA	<p>Qualifies for SPA for supporting numerous non-breeding bird populations, including the bar-tailed godwit (<i>Limosa lapponica</i>); curlew (<i>Numenius arquata</i>), water bird assemblages, wigeon (<i>Anas penelope</i>), and many other birds. It also provides habitat for breeding common tern (<i>Sterna hirundo</i>) and little tern (<i>Sternula albifrons</i>). There are no listed aquatic features designating this site.</p>	TF 33950 33560	5.6 km north east of the Scheme Site Boundary
The Wash NNR	<p>The Wash NNR is designated for being one of the last truly wild areas of Britain used for scientific research and monitoring. 10% of England's saltmarsh is within the Wash and it provides habitat and food for various breeding and non-breeding bird populations. It provides a feeding ground for 400,000 visiting birds in winter.</p>	TF 49250 25730	6.76 km north east of the Scheme Site Boundary

## National Designated Sites

- 4.1.3 National statutory designated sites within 5 km of the Scheme were identified from data searches. A total of two national statutory sites with aquatic ecology features as part of the reason for their designation and are listed in **Table 4.2** (Surfleet Lows

SSSI and Vernatts Drain LNR). **Figure 2** shows the location of national statutory designated sites in relation to the Scheme Site Boundary.

Table 4.2 Sites of National interest within 5 km of the Scheme.

Name	Reason for Designation (aquatic features)	Central National Grid Reference	Distance from the Scheme (km)
Surfleet Lows SSSI	One of the last remaining wet alluvial meadows left in Lincolnshire which has avoided agricultural improvement. Meadows such as these are rare across the UK's lowlands and there are a range of meadow plants and species typical of coastal regions.  For example, the Scheme retains marsh vegetation, such as common reed ( <i>Phragmites australis</i> ), false fox-sedge ( <i>Carex otrubae</i> ), sea club-rush ( <i>Scirpus maritimus</i> ), common spike-rush ( <i>Eleocharis palustris</i> ), distant sedge ( <i>Carex distans</i> ) and grey club-rush ( <i>Schoenoplectus tabernaemontani</i> ).	TF 25220 28620	3.15 km west of the Scheme Site Boundary
Vernatts Drain LNR	A 1½ hectare LNR comprising pond, woodland, fenland, scrub, grassland and meadow, habitats, supposedly home to water voles and a variety of dragonflies, birds and butterflies.	TF 24960 24120	1.8 km south west of the Scheme Site Boundary

### Non-statutory Sites

4.1.4 There are ten non-statutory designated sites within 2 km of the Scheme Site Boundary that are either designated for the conservation of aquatic/marine features or are potentially hydrologically connected and are listed in **Table 4.3** below. **Figure 3** shows the non-statutory designated sites in relation to the Scheme Site Boundary.

Table 4.3 Non-statutory sites of interest within 2 km of the Scheme.

Name	Reason for Designation (aquatic features)	Central National Grid Reference	Distance from the Scheme (km)
Surfleet Bank LWS	A long strip of sandy embankment and adjacent flat pasture on the north western side of the tidal River Welland, just downstream from the River Glen confluence. One of only two localities in Lincolnshire where the autumn ladies' tresses orchid ( <i>Spiranthes spiralis</i> ) has been seen in the last 20 years.	TF 28747 30263	Within the Scheme Site Boundary

Name	Reason for Designation (aquatic features)	Central National Grid Reference	Distance from the Scheme (km)
Surfleet Seas end Saltmarsh LWS	Area running alongside the River Welland that contains coastal and floodplain grazing marsh and mudflats.	TF 27955 28559	<0.1 km west of the Scheme Site Boundary
Vernatt's Drain LWS	Drainage channel that runs through arable land close to the River Welland.	TF 26704 26827	<0.2 km west of the Scheme Site Boundary
River Glen Corridor LWS	A botanically rich 20 km stretch of the River Glen.	TF 27975 29271	>0.3 km south west of the Scheme Site Boundary
Pinchbeck Marsh LWS	Large area of arable land between the Vernatt's Drain and the River Welland.	TF 26794 26246	1.1 km west of the Scheme Site Boundary
Blue Gowt Drain, North LWS	Drainage channel that comes off from the River Glen LWS. Runs alongside a golf course.	TF 27462 28501	< 0.7 km south west of the Scheme Site Boundary
Moulton Park and River LWS	Large green space area adjacent to a reach of the Moulton River. LWS includes a reach of the Moulton River.	TF 30609 24843	>1.3 km south east of the Scheme Site Boundary
South Bank Fosdyke LWS	A man-made raised floodbank with a wide berm along the southern side of the River Welland.	TF 30123 31387	<1.2 km north east of the Scheme Site Boundary
Moulton River LWS	A stretch of canalised drain that is prone to drying.	TF 31347 30209	>1.7 km north west of the Scheme Site Boundary
Risegate Eau LWS	The central 9 km of a 15 km long watercourse.	TF 28261 31795	1 km north of the Scheme Site Boundary

## Water Framework Directive Status

- 4.1.5 Seven WFD water bodies fall within the Study Area (Ref 25), however, only three WFD water bodies have the potential to be impacted either directly or indirectly by the Scheme within the Study Area and these are presented in **Table 4.4**. **Figure 9** shows the location of the WFD water bodies in relation to the Scheme Site Boundary.

4.1.6 The Substation Works fall within the Moulton River sub catchment of The Welland, which is ~5 km downstream of the Substation Works. Below, data is provided on the Moulton River WFD named water body (also known as “Lord’s Drain”) and the Welland WFD water bodies.

Table 4.4 Water Framework Directive (WFD) Water bodies that have the potential to be impacted by the Scheme.

Water Body	WFD Water Body ID	Ecological Status or Potential	Operational Catchment
Moulton River	GB205031050755	Moderate	Welland Lower
The Welland	GB530503100400	Moderate	Welland Lower
Risegate Eau	GB205031055525	Poor	Welland Lower
Whaplode River	GB205031055495	Moderate	Welland Lower

### The Welland

4.1.7 The Welland (Water Body ID: GB530503100400) (Ref 40) is designated as a Heavily Modified transitional water body, with a surface area of 1.36 km<sup>2</sup>. The river has a “Moderate” Ecological Status, with “Moderate” physico-chemical quality elements, “Not high” hydromorphological supporting elements, and “Good” supporting elements (surface water). No biological quality elements were assessed and the most recent WFD assessment occurred in 2022.

### Moulton River

4.1.8 Moulton River (Water Body ID: GB205031050755) (Ref 41), also known as “Lord’s Drain”, is designated as an Artificial river that is 5.6 km in length within a 24.8 km<sup>2</sup> catchment. The river has “Moderate” Ecological Potential, having “Not High” Hydromorphological Potential and “Good” Supporting elements (Surface Water) Potential, but a “Moderate” Physico-chemical quality element. No biological quality elements, chemical or priority substance potential were assessed and the latest WFD assessment was undertaken in 2022.

### Risegate Eau

4.1.9 Risegate Eau (Water Body ID: GB205031055525) (Ref 42) is an artificial river that is 4.3 km long and included within a 38.7 km<sup>2</sup> catchment. The river has “Poor” Ecological Potential, is classified as “Not High” Hydromorphological Potential, but “Good” Supporting elements (Surface Water) Potential. Biological quality elements are “Poor”, including “Poor” invertebrates and “Moderate” macrophytes and phytobenthos combined elements. Fish are not recorded at this location. It also acquired a “Moderate” Physico-chemical quality elements Potential. This water body did not require a chemical assessment and the latest WFD assessment occurred in 2022.

### Whaplode River

4.1.10 Whaplode River (Water Body ID: GB205031055495) (Ref 43) comprises of an artificial river, being of 9.6 km length and is within a 68.8 km<sup>2</sup> catchment. It is

assessed as “Moderate” for its Ecological Potential. Despite having a “High”, Specific pollutants Potential, “Not High” Hydromorphological Status, and “Good” Supporting elements (Surface Water) Potential, it had also retained “Moderate” Biological quality elements, including “Bad” invertebrate and “Moderate” macrophyte and phytobenthos combined elements Potential, alongside a “Moderate” Physico-chemical quality elements Potential. No chemical assessments were conducted on this water body and the latest WFD assessment of Whaplode River was conducted in 2022.

## Notable Species

- 4.1.11 Records of aquatic receptors were available from the LERC, GLNP (Ref 44), the EA Ecology & Fish Data Explorer (Ref 26) and NBN Atlas (Ref 27). Records from within the last ten years are presented below.

### Macroinvertebrates

- 4.1.12 There were two records of one notable macroinvertebrate species identified within 2 km of the Scheme (**Table 4.5**). These records belonged to the aquatic beetle (*Agabus conspersus*) recorded on Moulton Mere Drain (north), <0.7 km from the Scheme and Moulton River 2 km north east of Exempt Overhead Line Works Site Boundary. The aquatic beetle *A. conspersus* is designated as a Nationally Scarce (Ref 45) rare species, occurring in 16-100 hectares nationally.

Table 4.5 Notable macroinvertebrate species identified within 2 km of the Scheme within the last ten years.

<b>Species</b>	<b>Number of records</b>	<b>Closest Record</b>	<b>Water Course</b>	<b>Closest record National Grid Reference</b>	<b>Most recent year</b>	<b>Designations</b>	<b>Data Source</b>
<i>Agabus conspersus</i>	2	<0.7 km south east of the Scheme Site Boundary	Moulton Mere Drain (north)	TF 29900 25000	2016	Nationally Scarce	Environment Agency

- 4.1.13 A catchment wide desk study for crayfish (native and non-native) species was undertaken within the Scheme, but no records were found.

### **Macrophytes**

- 4.1.14 There is one record of one notable macrophyte species within 2 km of the Scheme, belonging to Grass-wrack pondweed (*Potamogeton compressus*) as shown in **Table 4.6**. Grass-wrack pondweed is a protected species, designated as a Species of Principal Importance (SPI) under Section 41 (previously UKBAP; Ref 46) of the NERC 2006 Act (Ref 47) and is classified as Nationally Scarce (Ref 48). It is also considered Endangered according to the Great British Red List (Ref 49 and Ref 50) and is a priority species according to the Lincolnshire local BAP (Ref 20).

Table 4.6 Desk Study records of notable macrophyte species identified within 2 km of the Scheme in the last ten years.

Species	Number of records	Closest Record	Water Course	Closest record National Grid Reference	Most recent year	Designations	Source
Grass-Wrack Pondweed ( <i>Potamogeton compressus</i> )	1	1.0 km north west of the Scheme Site Boundary	Risegate Eau	TF 27866 31769	2025	RedList_GB_post2001-EN S41 NERC 2006 Nationally Scarce UKBAP 2007 Lincolnshire local BAP	Environment Agency

## Fish

- 4.1.15 One historical record of one notable fish species was identified within 2 km of the Scheme, the European eel, listed in 2015 by the GLNP database (Ref 51). This record was >1.2 km west of the Scheme. No other records were detected in the last ten years within the EA NFPD, EA TraC, NBN Atlas or LERC databases.
- 4.1.16 European eel are a protected species, being an SPI under Section 41 (previously UKBAP 2007; Ref 46) of the Natural Environments & Rural Communities (NERC) 2006 Act (Ref 47) and is protected through the Eels (England and Wales) Regulations 2009 (Ref 51) and by Appendix II of the European Commission's Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (EC CITES Appendix II; Ref 52). It is also classified as 'Critically Endangered' under the International Union for Conservation of Nature (IUCN) Global Red list (Ref 53), and considered a priority species by the Lincolnshire BAP (Ref 20). European eel is also included under Appendix II of the Bonn Convention (Ref 54), an international agreement that exists to encourage legislation implementation to protect species of unfavourable conservation, but it does not specifically act as legislation to directly protect species.
- 4.1.17 Although no records of European smelt (*Osmerus eperlanus*) were identified within the desk study, recent consultation (February 2026) with the EA has confirmed the presence of European smelt within the River Welland downstream of Spalding in 2012. Therefore, on a precautionary basis we have included them in the baseline data.
- 4.1.18 European smelt are a protected species, being an SPI under Section 41 (previously UKBAP 2007; Ref 20) of the Natural Environments & Rural Communities (NERC) 2006 Act (Ref 47) and considered a priority species by the Lincolnshire BAP (Ref 20).
- 4.1.19 Historical records of fish species identified in the desk study are shown in **Table 4.7**.

Table 4.7 Historical desk study records of notable fish species identified within 2 km of the Scheme.

Species	Number of records	Closest Record	Water Course	Closest record National Grid Reference	Most recent year	Designations	Data Source
European eel ( <i>Anguilla anguilla</i> )	1	>1.1 km south west of the Scheme Site Boundary	Unnamed Drain	TF 27100 29500	2015	Appendix II Bonn Convention EC Cites Appendix II UKBAP 2007 Lincolnshire local BAP S41 NERC 2006 RedList_Global_pos t2001-CR	GLNP LERC
European smelt ( <i>Osmerus eperlanus</i> )	N/A	Unknown	River Welland	Unknown	2012	S41 NERC 2006 UKBAP 2007	Environment Agency

- 4.1.20 A search for additional migratory species was conducted at a catchment level upstream and downstream of the Scheme over the last ten years. Results are shown in **Table 4.8**. 56 records of brown/sea trout (*Salmo trutta*), three records of lamprey (*Petromyzontidae*), and six records of lamprey (*Lampetra* sp.) were identified upstream of the Scheme, but no additional migratory fish species were recorded downstream of the Scheme.
- 4.1.21 Brown/sea trout is a SPI under Section 41 (previously UKBAP 2007; Ref 46) of the NERC Act 2006 (Ref 47) and also Lincolnshire Local BAP species (Ref 20).
- 4.1.22 The family *Petromyzontidae* includes two migratory lamprey species found in UK waters: river lamprey (*Lampetra fluviatilis*) and sea lamprey (*Petromyzon marinus*), whilst the genus *Lampetra* includes the migratory river lamprey. Due to the difficulty in distinguishing these species in the field, records are often not identified to species level. Therefore, following a precautionary approach, it should be assumed that these lamprey species could be present within the Scheme. Their respective designations are listed within **Table 4.8**.
- 4.1.23 River lamprey is a SPI in Section 41 (previously UKBAP 2007; Ref 46) of the NERC 2006 Act (Ref 47) appearing under Schedule 4 of The Conservation of Habitats and Species Regulations 2017 (HabsReg-Sch4) (Ref 55), Annex III of the Bern Convention 1979 (Bern-A3) (Ref 56), and Annex II (HabDir-A2) and Annex V (HabDir-A5) of the Habitats Directive (Ref 57 and Ref 58, respectively). River lamprey are also listed in the Lincolnshire Local BAP (Ref 20).
- 4.1.24 Sea lamprey (*Petromyzon marinus*) is a Section 41 species (previously UKBAP 2007; Ref 46) under the NERC Act 2006 (Ref 47), and are listed as an Annex III species under the Bern Convention (Ref 56), an Annex II species under the Habitats Directive (Ref 57), and are listed as a Lincolnshire Local BAP species (Ref 20).

Table 4.8. Additional notable migratory fish species identified at a catchment level, located upstream of the Scheme in the last ten years.

Taxa	Number of records	Closest record	Catchment	Closest record National Grid Reference	Years recorded	Designations	Data Source
Lamprey ( <i>Lampetra</i> sp.)	6	44.9 km	Welland	TF 04200 10200	2015	<i>Lampetra fluviatilis</i> : Bern-A3 HabDir-A2 HabDir-A5 HabReg-Sch4 UKBAP 2007 Lincolnshire local BAP S41 NERC 2006, <i>Lampetra planeri</i> : Bern-A3 HabDir-A2	Environment Agency
Lamprey ( <i>Petromyzontidae</i> )	3	30 km	Welland	TF 03870 10930	2015-2017	<i>Lampetra fluviatilis</i> : Bern-A3 HabDir-A2 HabDir-A5 HabReg-Sch4 UKBAP 2007 Lincolnshire local BAP S41 NERC 2006, <i>Lampetra planeri</i> : Bern-A3 HabDir-A2 <i>Petromyzon marinus</i> : Bern-A3	Environment Agency

Taxa	Number of records	Closest record	Catchment	Closest record National Grid Reference	Years recorded	Designations	Data Source
						HabDir-A2 UKBAP 2007 Lincolnshire local BAP S41 NERC 2006	
Brown/Sea Trout ( <i>Salmo trutta</i> )	56	27.4 km	Welland	TF 10700 14900	2015-2025	UKBAP 2007 Lincolnshire local BAP S41 NERC 2006	Environment Agency

## Non-native Species

- 4.1.25 A total of 28 records, across six non-native taxa that were identified from the EA fish and ecology data explorer, EA catchment data explorer, NBN Atlas, and the LERC databases (**Table 4.9**). Three of these non-native species are legislated as invasive according to either Schedule Nine of the Wildlife and Countryside Act 1981 (WCA 1981 Sch9) (Ref 59), Schedule two of the Invasive Alien Species (Enforcement & Permitting) Order 2019 (IAS Order 2019) (Ref 60), or both; the Chinese mitten crab (*Eriocheir sinensis*) and giant hogweed (*Heracleum mantegazzianum*) and Nuttall's waterweed (*Elodea nuttallii*). The New Zealand mud snail (*Potamopyrgus antipodarum*), the bladder snail (*Physella acuta*), and the amphipod (*Gammarus tigrinus*) are not listed in English legislation as INNS in the UK.

Table 4.9 Invasive and non-native species identified within 2 km of the Scheme within the last ten years.

Species	Number of records	Closest Record	Water Course	Closest record National Grid Reference	Most recent year	Designations	Data Source
New Zealand mud snail ( <i>Potamopyrgus antipodarum</i> )	10	<0.7 km the Scheme Site Boundary	Vernatt's Drain	TF 26029 25195	2016	-	NBN (EA)
Chinese mitten crab ( <i>Eriocheir sinensis</i> )	5	>0.5 km west of the Scheme Site Boundary	River Glen	TF 27800 29200	2023	IAS Order 2019 WCA 1981 Sch9	GLNP LERC
Giant Hogweed ( <i>Heracleum mantegazzianum</i> )	1	1.2 km south west of the Scheme Site Boundary	River Glen	TF 27200 28800	2015	IAS Order 2019 WCA 1981 Sch9	GLNP LERC
Amphipod ( <i>Gammarus tigrinus</i> )	9	<1.9 km north east of the Scheme Site Boundary	Risegate Eau	TF 30171 31895	2025	-	EA
Nuttall's Waterweed ( <i>Elodea nuttallii</i> )	1	>1 km north west of the Scheme Site Boundary	Risegate Eau	TF 27866 31769	2025	IAS Order 2019	EA
The Bladder Snail ( <i>Physella acuta</i> )	2	<2.0 km north east of the Scheme Site Boundary	Moulton River	TF 31429 30850	2024	-	EA

## Site-specific macroinvertebrate desk study results

- 4.1.26 One crossing point (TCPA-OHL-WCX-4) that was selected for site survey was unable to be surveyed due to health and safety concerns. Online data from the EA was used for this location and is presented below.

### TCPA-OHL-WCX-4 (Exempt Overhead Line Works)

- 4.1.27 Data from the EA for the River Welland (Biosys Site ID: 224194; Ref 40) indicate that the macroinvertebrate community in spring was relatively diverse (30 taxa). The composition was largely comprised of crustaceans such as the non-native, non-invasive amphipod *Crangonyx pseudogracilis/floridanus* (26%), as well as the non-biting midge Chironomidae (25%), and snails (23%). In smaller numbers, true bugs including the lesser water boatman (*Hesperocorixa castanea*), and damselflies such as the blue-tailed damselfly (*Ischnura elegans*) were also present. The community was indicative of 'poor' biological water quality (ASPT-WHPT 3.72) and 'heavily sedimented' conditions (PSI score 2.86) with 'low' sensitivity to reduced flows (LIFE score 5.85). The CCI score of 6.2 indicates that the site is of 'moderate' conservation value.
- 4.1.28 The autumn EA data show an equally diverse macroinvertebrate assemblage (32 taxa) with the community dominated by crustaceans such as the non-native, non-invasive amphipod *C. pseudogracilis/floridanus*, which accounted for 66% of identified specimens. The site also supported a relatively diverse assemblage of caddisfly larvae including *Phryganea bipunctata*, as well as several snail and bivalve taxa including the nut orb mussel (*Sphaerium rivicola*). The non-native, non-invasive New Zealand mud snail (*P. antipodarum*) was also noted. Biological water quality was 'poor' (ASPT-WHPT 4.10) and the PSI scores for this site indicate that the site was 'heavily sedimented' (6.82). The macroinvertebrate community had 'low' sensitivity to reduced flows (LIFE score 5.95) and was of 'low' conservation value (CCI score 4.6).

## 4.2 Field Survey

- 4.2.1 Surveys for aquatic taxa were completed within the Study Area with survey locations shown in **Figure 4** to **Figure 7**.
- 4.2.2 The results from the field surveys for each aquatic ecology receptor are detailed below per crossing point location, labelled with the crossing point ID and relevant consenting boundary.

### Macroinvertebrates

- 4.2.3 The full aquatic macroinvertebrate taxa list is in **Appendix A** of this report. A description of the macroinvertebrate community at each crossing point and the Weston Marsh Substation location is provided in the following sub-sections.

### WM-WCX-3/TCPA-OHL-WCX-10 & 11 (Substation Works)

- 4.2.4 Crossing points WM-WCX-3/TCPA-OHL-WCX-10 & 11 cross an unnamed channel (watercourse ID: WC\_WM\_63), which is proposed to be temporarily culverted for access during construction and permanently diverted as part of the Substation Works. The ditch was located within the field boundary between two agricultural fields

to the east of Marsh Road. The unshaded channel (average width: 1.5 m; average depth: 0.60 m) was a straightened, realigned ditch with a flow less than 10cm/second and water was clear. The substrate here was soft and composed predominantly of silt.

- 4.2.5 This site was dry during the autumn survey, and as such no aquatic macroinvertebrate survey was completed.
- 4.2.6 Low macroinvertebrate diversity was recorded for this site in spring (6 taxa), with the community primarily comprising the non-biting midge Chironomidae, and seed shrimp Ostracoda, which together accounted for 82% of identified specimens. Also present were snails including the dwarf pond snail (*Galba truncatula*) and the non-native, non-invasive New Zealand mud snail, as well as diving beetles Dytiscidae. Biological water quality was 'poor' (ASPT-WHPT 3.42) and the PSI score for this site indicates that the site was 'heavily sedimented' (0.00), characterised by communities with 'low' sensitivity to reduced flows (LIFE score 5.50) and due to only one macroinvertebrate recorded at species level, was of 'moderate' conservation value (CCI score 6.0).

#### **TCPA-OHL-WCX-15 & 16(S37 4ZM Overhead Line Works and Exempt Overhead Line Works)**

- 4.2.7 Crossing points TCPA-OHL-WCX-15 & 16 cross Lords Drain (watercourse ID: WC\_WM\_69), where a temporary culvert for access is proposed. The ditch was within a field boundary between two agricultural fields to the west of Carrington Road. The unshaded channel (average width: 5 m; average depth: 0.60 m) was a straightened, realigned ditch with a flow less than 10cm/second and low turbidity. The substrate here was soft and predominantly comprised silt.
- 4.2.8 The spring community in the sample for this site was moderately diverse (21 taxa), dominated by the non-biting midge Chironomidae which accounted for 81% of the community. Also abundant were several snail species including the non-native, non-invasive New Zealand mud snail and various beetle taxa such as *Haliphus lineatocollis*. Biological water quality was 'poor' (ASPT-WHPT 3.51) and the PSI scores for this site indicate that the site was 'heavily sedimented' (3.23). The macroinvertebrate community had 'low' sensitivity to reduced flows (LIFE score 6.00) and was of 'low' conservation value (CCI score 1.0).
- 4.2.9 The autumn assemblage was slightly more diverse than in spring (26 taxa) and was dominated by snails, particularly the non-native, non-invasive New Zealand mud snail, which accounted for 84% of the community. Also recorded in the sample for this site were damselfly larvae, true bugs such as the common backswimmer (*Notonecta glauca*), and two beetle species. The community was indicative of 'poor' biological water quality (ASPT-WHPT 3.46) and 'heavily sedimented' conditions (PSI score 5.00) with 'low' sensitivity to reduced flows (LIFE score 5.73). The CCI score of 3.0 indicates that the Scheme is of 'low' conservation value.

#### **WM-WCX-19 (S37 2WS Overhead Line Works and Exempt Overhead Line Works)**

- 4.2.10 Crossing point WM-WCX-19 crosses a southern section of Lords Drain, where a temporary culvert is proposed for access. The channel was within the field boundary between two agricultural fields to the west of Hall Gate. The unshaded channel (average width: 2 m; average depth: 0.35 m) was a straightened, realigned ditch with a flow less than 10cm/second and was slightly turbid. The substrate here was soft

and comprised predominantly of silt with some (60% cover) in-channel vegetation present.

- 4.2.11 In spring, relatively high diversity was recorded in the sample for this site (34 taxa) with the macroinvertebrate community dominated by true fly larvae totalling 41% of identified specimens. Also abundant was the pond olive mayfly (*Cloeon dipterum*) and six snail taxa, including the non-native, non-invasive New Zealand mud snail, which accounted for 21 and 18 percent of the assemblage respectively. Seven beetle taxa were also recorded which included the screech beetle (*Hygrobia hermanni*) as well as the non-native, non-invasive amphipod *C. pseudogracilis/floridanus*. The community was indicative of 'poor' biological water quality (ASPT-WHPT 4.27) and 'heavily sedimented' conditions (PSI score 4.65) with 'low' sensitivity to reduced flows (LIFE score 5.67). The CCI score of 4.2 indicates that the site is of 'low' conservation value.
- 4.2.12 The autumn assemblage was less diverse than in spring (25 taxa) with the community predominantly comprising snails such as the non-native, non-invasive New Zealand mud snail which accounted for 94% of identified specimens. Several beetle taxa such as the screech beetle were present alongside the non-native, non-invasive amphipod *C. pseudogracilis/floridanus* and true bugs including the common backswimmer. Biological water quality was 'poor' (ASPT-WHPT 3.49) and the PSI scores for this site indicate that the site was 'heavily sedimented' (0.00). The macroinvertebrate community had 'low' sensitivity to reduced flows (LIFE score 5.75) and was of 'low' conservation value (CCI score 3.9).

## Macrophytes

### **TCPA-OHL-WCX-4 (Exempt Overhead Line Works)**

- 4.2.13 The crossing point TCPA-OHL-WCX-4 is over a tidal reach of the River Welland (watercourse ID: WC\_WM\_33). Due to its proximity to the coast and the influence of seawater, it was devoid of all freshwater macrophytes. The only macrophyte seen was the marine macroalgae (seaweed) of the genus *Fucus sp.* seen floating upstream with the incoming tide.

### **WM-WCX-3/TCPA-OHL-WCX-10 & 11/TCPA-OHL-WCX-15 & 16/ WM-WCX-19 (S37 2WS Overhead Line Works, S37 4ZM Overhead Line Works, Exempt Overhead Line Works and Substation Works)**

- 4.2.14 Macrophyte surveys were completed at crossing points WM-WCX-3/TCPA-OHL-WCX-10 & 11/TCPA-OHL-WCX-15 & 16/WM-WCX-19, however, survey data was lost due to a software upload error and is no longer available. These sites will be re-surveyed in June 2026.
- 4.2.15 While survey data is no longer available, it was confirmed that no notable species were encountered at these sites, as rare or notable species would have been recorded photographically independent of the survey proforma by the surveyor. It is possible that macrophyte INNS may be present at some of these sites including *Elodea sp.*, which have been found across the wider site.

## Fish

### TCPA-OHL-WCX-15 & 16(S37 4ZM Overhead Line Works and Exempt Overhead Line Works)

- 4.2.16 Lord's Drain at the crossing points TCPA-OHL-WCX-15 & 16, was a steep-sided ditch flowing between arable fields, with a stretch of broadleaf woodland on the right-hand bank. The channel bed was a gentle concave shape with an average wetted width of approximately 6 m, and an average depth of 0.5 m. The water level was normal, with an estimated flow of <0.3 m/s. Glide and ditch were the recorded flow types observed at the Scheme, with flow being particularly slow around the channel margins. Moderately brackish conditions were noted in the drain, with salinity measured at 1.50 ppt.
- 4.2.17 The water was clear and allowed for substrate assessment. The channel bed was predominantly soft sinking (80%) with only 20% recorded as stable. The substrate type primarily comprised silt (90%) and a minor quantity of clay (10%).
- 4.2.18 The channel was completely unshaded, with present macrophyte species being exclusively submerged linear-leaved species across the channel bed. Macrophyte taxa was mostly composed of starwort (*Callitriche* sp.) and pondweed (*Potamogeton* sp.) both of which appeared to cover 60% of the channel bed. Bankside vegetation was uniform, including a mix of short and tall terrestrial grasses, nettles and dead reeds.
- 4.2.19 A semi-quantitative, single anode, electric fishing survey was conducted over an ~100 m reach, with generator powered electric fishing equipment punted on a boat by wading surveyors. Conductivity was recorded at 2872  $\mu\text{S}/\text{cm}$ . Electric fishing parameters used were an output of 70V DC, 50 Hz frequency, and an output of between 4-6 amps.
- 4.2.20 A total of 21 fish were caught during the survey (**Table 4.10**). The species identified are characteristic of a lowland ditch system.

Table 4.10 Fish caught at Crossing Point IDs TCPA-OHL-WCX-15 & 16 on Lord's Drain

Fish species	Run 1 (n)	Fork length (mm)
European eel ( <i>Anguilla anguilla</i> )	6	180-310
Roach ( <i>Rutilus rutilus</i> )	12	37-105
Three-spine Stickleback ( <i>Gasterosteus aculeatus</i> )	3	30-48

- 4.2.21 A total of three fish species were present at this site. Among the species identified, the notable and migratory protected European eel (n=6) were caught along the survey reach.
- 4.2.22 The most numerically dominant fish species caught was roach (*Rutilus rutilus*; n=12), while only three three-spined stickleback (*Gasterosteus aculeatus*) were caught.

Most fish were found hidden within submerged linear leaved vegetation, a common refuge for roach and three-spine stickleback.

## Notable Species

4.2.23 Notable species identified during fish surveys are presented in **Table 4.11**.

Table 4.11 Notable Species Identified within the Study Area and relevant consenting boundary

Fish Species	Crossing ID	Consenting Boundary(s)	Designations
European eel ( <i>Anguilla anguilla</i> )	TCPA-OHL-WCX-15 & 16	S37 4ZM Overhead Line Works / Exempt Overhead Line Works	Appendix II Bonn Convention EC Cites Appendix II UKBAP 2007 Lincolnshire local BAP S41 NERC 2006 RedList_Global_post2001-CR

4.2.24 European eel are a protected species, with designations explained in paragraph 4.1.16.

## Non-native Species

4.2.25 Non-native species identified within the Study Area are presented in

4.2.26 **Table 4.12.** These were the amphipod *C. pseudogracilis/floridanus* and the New Zealand mud snail. Both species are now considered to be naturalised and are not listed on UK legislation. However, legislation makes it an offence to release or allow to escape listed species (or species not ordinarily a resident in and are not a regular visitor to Great Britain in a wild state) into the wild (Ref 59, Ref 60). As such, best practice biosecurity measures to prevent the spread of these species should be considered.

Table 4.12 Non-native species recorded within the Study Area and relevant consenting boundaries

Species Name	Crossing ID	Consenting Boundary	Designations
Non-invasive amphipod <i>Crangonyx pseudogracilis/floridanus</i>	TCPA-OHL-WCX-4	Exempt Overhead Line works	These non-native taxa are now considered to be naturalised and are not listed on UK legislation.
New Zealand mud snail ( <i>Potamopyrgus antipodarum</i> )	TCPA-OHL-WCX-4, TCPA-OHL-WCX-1, TCPA-OHL-WCX-15 & 16and WM-WCX-19	Exempt Overhead Line Works and Substation Works	These non-native taxa are now considered to be naturalised and are not listed on UK legislation.

# 5. Summary

- 5.1.1 Below is a summary of the baseline data within this report, any impacts will be assessed where required within the **Ecological Impact Assessment** of the Substation Works and the Environmental Appraisal Reports submitted in support of the necessary applications for the S37 Overhead Line Works.
- 5.1.2 The desk study identified four international statutory designated sites within 10 km of the Scheme. However, only two of these statutory designated sites included aquatic ecology features as part of the reason for their designation (the Wash Ramsar and the Wash and Norfolk Coast SAC).
- 5.1.3 The desk study also identified two national statutory sites within 5 km of the Scheme, which are Surfleet Lows SSSI and Vernatt's Drain LNR.
- 5.1.4 There are 13 non-statutory designated sites including aquatic features within 2 km of the Scheme as outlined below:
- 1) Risegate Eau LWS;
  - 2) Surfleet Bank LWS;
  - 3) Surfleet Seas end Saltmarsh LWS;
  - 4) Vernatt's Drain LWS;
  - 5) Vernatt's Nature Reserve LWS;
  - 6) River Glen Corridor LWS;
  - 7) Pinchbeck Marsh LWS;
  - 8) Blue Gowt Drain North LWS;
  - 9) Blue Gowt Drain, West Marsh Road LWS;
  - 10) Moulton Park and River LWS;
  - 11) South Bank Fosdyke LWS
  - 12) A16 Verges South of the River Glen LWS; and
  - 13) A16 Verges North of the River Glen LWS;
- 5.1.5 These statutory and non-statutory sites require consideration due to associated aquatic ecology receptors present at these sites.
- 5.1.6 Eight WFD water bodies have been identified within 2 km of, or are hydrologically connected to the Scheme, as outlined below:
- 1) Moulton River;
  - 2) South Holland Main Drain;
  - 3) Risegate Eau;
  - 4) Vernatt's Drain;

- 5) Glen;
- 6) Whaplode River;
- 7) The Welland; and
- 8) Welland – conf Greatford Cut to tidal.

5.1.7 Of these WFD water bodies, the Glen, Moulton River, Whaplode River, Vernatt's Drain, South Holland Main Drain, the Welland, and the Welland – conf Greatford Cut to tidal have been classified as having "Moderate" Ecological Status or Potential, whereas Risegate Eau is classified as having "Poor" Ecological Status or Potential. However, only Moulton River, Risegate Eau and the Welland have the potential to be influenced by the Scheme.

5.1.8 A summary of notable species found during the desk study and survey effort is provided by consenting boundary in the sections below.

## 5.2 S37 2WS Overhead Line Works Site Boundary

5.2.1 The desk study identified two records of one notable invertebrate species identified within 2 km of the Scheme, comprising of the Nationally Scarce beetle *A. conspersus* with the closest record found 0.7 km south east of S37 2WS Overhead Line Works.

5.2.2 The desk study identified one record of one notable macrophyte species within 2 km of the Scheme belonging to Grass-wrack pondweed which was 1 km north west of the Scheme and the designations for which are explained in Paragraph 4.1.14. The desk study identified one record of one notable fish species within 2 km of the Scheme, belonging to European eel. This was found 1.9 km north west of the S37 2WS Overhead Line Works.

5.2.3 The desk study identified 28 records of six non-native taxa present within 2 km of the Scheme, including, three species of which are legislated as invasive according to either the Wildlife and Countryside Act 1981 (Ref 59), and the Invasive Alien Species (Enforcement & Permitting) Order 2019 (Ref 60), or both, including five records of the Chinese mitten crab, one record of Nuttall's waterweed, and one record of giant hogweed. The other five non-native taxa within 2 km of S37 2WS Overhead Line Works comprised of ten records of New Zealand mud snail, nine records of the freshwater amphipod (*Gammarus tigrinus*), and two records of the bladder snail.

5.2.4 Within S37 2WS Overhead Line Works Site Boundary there is a single proposed crossing point, WM-WCX-19, where surveys were completed. WM-WCX-19 is a crossing point over Lord's Drain, a ditch approximately 1.5 m wide and 0.3 m deep, surrounded by agricultural fields, and containing a range of common aquatic macrophytes such as duckweed *Lemna* sp. and common reed (*Phragmites australis*).

5.2.5 The survey data indicate that the macroinvertebrate communities at crossings RJ-WCX-10 were typical of drainage ditches in this area, including freshwater snails, true-fly larvae and water beetles. No notable macroinvertebrate species were identified. The non-native, non-invasive New Zealand mud snail was recorded at this site. This species is now considered to be naturalised and are not listed on UK legislation.

5.2.6 Macroinvertebrate surveys indicated that water quality was 'poor' and the PSI scores for this site indicate that the site was 'heavily sedimented'. The macroinvertebrate

community had 'low' sensitivity to reduced flows and was of 'low' conservation value. No protected or notable macroinvertebrate taxa were recorded.

- 5.2.7 Macrophyte surveys on WM-WCX-19 had been conducted, however, survey data was lost and is no longer available. These sites will be re-surveyed in June 2026. While survey data is no longer available, it was confirmed that no notable species were encountered at these sites, as rare or notable species would have been recorded photographically independent of the survey proforma by the surveyor. It is however possible that macrophyte INNS may be present at some of these sites.
- 5.2.8 An electric fishing survey at TCPA-OHL-WCX-15/16, which also crosses Lord's Drain, confirmed the presence of European eel at the site and supported desk study records of the species within the Study Area. The only other fish caught were three-spined stickleback and roach, two common and widespread species. No other protected or notable fish, including migratory species, were recorded.

### 5.3 S37 4ZM Overhead Line Works Site Boundary

- 5.3.1 The desk study identified one record of one notable invertebrate species identified within 2 km of S37 4ZM Overhead Line Works; the Nationally Scarce beetle *A. conspersus* (Ref 45) found 0.7 km south east of S37 4ZM Overhead Line Works.
- 5.3.2 The desk study identified no notable macrophyte species identified within 2 km of S37 4ZM Overhead Line Works.
- 5.3.3 The desk study identified one record of one notable fish species identified within 2 km of S37 4ZM Overhead Line Works, belonging to European eel, which was 1.9 km north west from the S37 4ZM Overhead Line Works Site Boundary. The designations for European eel are provided in Paragraph 4.1.16.
- 5.3.4 The desk study identified six records of four non-native taxa present within 2 km of S37 4ZM Overhead Line Works, two species of which are legislated as invasive according to the Wildlife and Countryside Act 1981 (Ref 59), and the Invasive Alien Species (Enforcement & Permitting) Order 2019 (Ref 60), including three records of the Chinese mitten crab and one record of giant hogweed. The other non-native taxa within 2 km of S37 4ZM Overhead Line Works comprised two records of New Zealand mud snail.
- 5.3.5 Within S37 4ZM Overhead Line Works Site Boundary there are two proposed crossing points WM-WCX-19 and TCPA-OHL-WCX-15/16 on Lord's Drain. Lord's Drain is an agricultural drainage ditch that is approximately 6 m wide and 0.4 m deep, surrounded by arable fields and a narrow strip of broadleaf woodland. The survey data indicate that the macroinvertebrate communities at crossings WM-WCX-19 and TCPA-OHL-WCX-15/16 were typical of drainage ditches in this area, with both ditch communities including freshwater snails, true-fly larvae and water beetles, with TCPA-OHL-WCX-15/16 also having damselfly larvae and true bugs present. No notable macroinvertebrate species were identified.
- 5.3.6 The macroinvertebrate surveys indicated that at both ditches, water quality was 'poor' and the PSI scores for this site indicate that the site was 'heavily sedimented'. The macroinvertebrate community had 'low' sensitivity to reduced flows and was of 'low' conservation value. No protected or notable macroinvertebrate taxa were recorded. The non-native, non-invasive New Zealand mud snail was recorded at both crossing points, whilst the non-native, non-invasive amphipod *C. pseudogracilis/floridanus* was also present at WM-WCX-19.

- 5.3.7 Macrophyte survey data on WM-WCX-19 and TCPA-OHL-WCX-15/16 had been conducted, however, survey data was lost due to a software upload error and is no longer available. These sites will be re-surveyed in June 2026. While survey data is no longer available, it was confirmed that no notable species were encountered at these sites, as rare or notable species would have been recorded photographically independent of the survey proforma by the surveyor. It is however possible that macrophyte INNS may be present at some of these sites.
- 5.3.8 An electric fishing survey at crossing point TCPA-OHL-WCX-15/16 confirmed the presence of European eel at the site and supported desk study records of the species within the Study Area. The only other fish caught were three-spined stickleback and roach, two common and widespread species. No other protected or notable fish, including migratory species, were recorded.

## 5.4 Exempt Overhead Line Works Site Boundary

- 5.4.1 The desk study identified no notable macroinvertebrates within 2 km of the Exempt Overhead Line Works.
- 5.4.2 The desk study identified one record of one notable macrophyte species within 2 km of the Exempt Overhead Line Works belonging to Grass-wrack pondweed which was 1 km north east of the Exempt Overhead Line Works. The designations for this species are described in paragraph 4.1.14.
- 5.4.3 The desk study identified one record of one notable fish species identified within 2 km of the Exempt Overhead Line Works, belonging to European eel that was 1.1 km south west of this part of the Scheme. A catchment level search of the Exempt Overhead Line Works Site Boundary concluded that two additional notable migratory fish taxa, brown/sea trout and lamprey spp., were present upstream in the Welland catchment while searches downstream provided no further records. Although no records of European smelt were identified within the desk study, consultation with the EA has confirmed the presence of European smelt within the River Welland downstream of Spalding in 2012. Therefore, on a precautionary basis we have included them in the baseline data. Please refer to **Sections 3.4** for detailed information on protection status of notable fish species.
- 5.4.4 The desk study identified eight records of four non-native taxa within 2 km of the Exempt Overhead Line Works, including three species considered invasive according to either the Wildlife and Countryside Act 1981 (Ref 59), the Invasive Alien Species (Enforcement & Permitting) Order 2019 (Ref 60), or both, including the five records of the Chinese mitten crab, one record of Nuttall's waterweed, and one record of giant hogweed. The other non-native taxa record was one record of the shrimp *G. tigrinus*.
- 5.4.5 Within the Exempt Overhead Line Works Site Boundary are proposed crossing points TCPA-OHL-WCX-15/16 and TCPA-OHL-WCX-4, which cross over a tidal reach of the River Welland which is surrounded by numerous agricultural fields. It is over 20 m in width and > 1 m in depth. The survey data indicate that the macroinvertebrate communities at crossing point TCPA-OHL-WCX-15/16 were typical of artificial drainage ditches in this area, including freshwater snails, true-fly larvae, water beetles, damselfly larvae and true bugs.
- 5.4.6 Macroinvertebrate analysis for crossing point TCPA-OHL-WCX-4 relied on desk study data from the EA. This site on the River Welland indicated that the macroinvertebrate community was relatively diverse and included non-biting midges,

true bugs, damselflies, caddisflies mussels, aquatic snails and the non-native, non-invasive amphipod *C. pseudogracilis/floridanus* and the non-native, non-invasive New Zealand mud snail was also present in this data.

- 5.4.7 The macroinvertebrate surveys indicated that both crossing point TCPA-OHL-WCX-15/16 and crossing point TCPA-OHL-WCX-4 had 'poor' water quality and the PSI scores indicated that the sites were 'heavily sedimented'. The macroinvertebrate communities had 'low' sensitivity to reduced flows and were of 'moderate' conservation value for crossing point TCPA-OHL-WCX-4 and 'low' conservation taxa for crossing point TCPA-OHL-WCX-15/16. No notable macroinvertebrate taxa were recorded. The non-native, non-invasive New Zealand mud snail was also present in crossing point TCPA-OHL-WCX-15/16.
- 5.4.8 Macrophyte surveys on the River Welland (crossing point TCPA-OHL-WCX-4) did not find any freshwater macrophytes due to its proximity to the coast and the influence of seawater. The only macrophyte seen was marine macroalgae (seaweed) of the genus *Fucus*. seen floating upstream with the incoming tide. Macrophyte survey data on crossing point TCPA-OHL-WCX-15/16 was lost and is no longer available. These sites will be re-surveyed in June 2026. While survey data is no longer available, it was confirmed that no notable species were encountered at these sites, as rare or notable species would have been recorded photographically independent of the survey proforma by the surveyor. It is however possible that macrophyte INNS may be present at some of these sites.
- 5.4.9 No fish surveys were conducted within the Exempt Overhead Line Works as watercourse features were either unsuitable to support fish populations or unsafe to survey from a health and safety perspective.

## 5.5 Substation Works Site Boundary

- 5.5.1 The desk study identified two records of one notable macroinvertebrate species found within 2 km of the Substation Works, including one record of the Nationally Scarce beetle *A. conspersus* (Ref 45) found 0.7 km south east of the Substation Works.
- 5.5.2 The desk study identified one record of one notable macrophyte species within 2 km of the Substation Works, belonging to Grass-wrack pondweed. The designations for which are described in Paragraph 4.1.14.
- 5.5.3 The desk study identified one record of one notable fish species identified within 2 km of the Substation Works, belonging to European eel. This was found 1.9 km north west from the Substation Works. The designations for European eel are explained in Paragraph 4.1.16.
- 5.5.4 The desk study identified 25 records of six non-native taxa identified within 2 km of Substation Works, including three records of species considered invasive according to either the Wildlife and Countryside Act 1981 (Ref 59), the Invasive Alien Species (Permitting & Enforcement) Order 2019 (Ref 60), or both, including five records of the Chinese mitten crab, one record of giant hogweed, and one record of Nuttall's waterweed. The other non-native taxa included nine records of the New Zealand mud snail, seven records of the shrimp *G. tigrinus*, and two records of the bladder snail (*P. acuta*).
- 5.5.5 Within the Substation Works Site Boundary is crossing point WM-WCX-3 only, which is also representative of the drainage network to be diverted for the substation

location. Crossing point WM-WCX-3 is an agricultural drainage ditch surrounded by arable fields, it is about 1.6 m wide, and has an average depth of 0.4 m.

- 5.5.6 The survey data indicate that the macroinvertebrate communities at crossing point WM-WCX-3 were typical of artificial drainage ditches in this area, including freshwater snails, true-fly larvae and water beetles. No notable macroinvertebrate species were identified. The non-native, non-invasive New Zealand mud snail was also recorded in crossing point WM-WCX-3.
- 5.5.7 Although macrophyte surveys were completed at crossing point WM-WCX-3, survey data was lost due to a software upload error and is no longer available. These sites will be re-surveyed in June 2026. While survey data is no longer available, it was confirmed that no notable species were encountered at these sites, as rare or notable species would have been recorded photographically independent of the survey proforma by the surveyor. It is however possible that macrophyte INNS may be present at some of these sites.
- 5.5.8 No fish surveys were conducted within the Substation Works as watercourses at the crossing points and substation locations were unsuitable to support fish populations.

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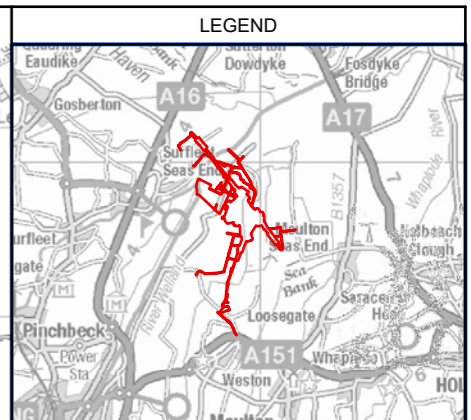
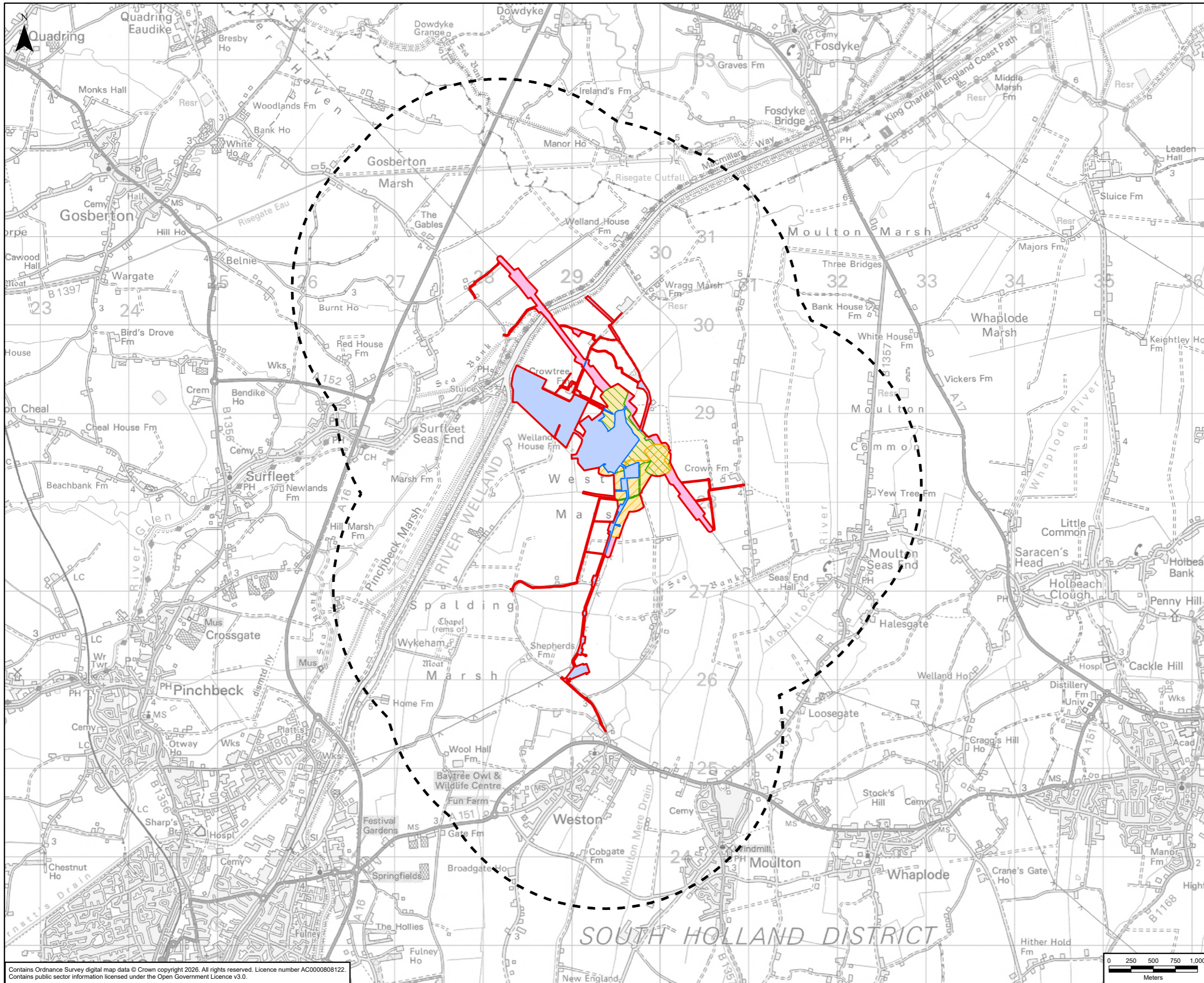
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# Figures

# Figure 1 Aquatic Study Area

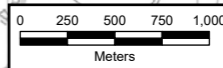


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- Scheme Site Boundary
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  - Scheme Site Boundary - 2km Buffer
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  - Exempt Overhead Line Works Site Boundary
  - S37 - 42M - OHL Works Site Boundary
  - S37 - 2WS - OHL Works Site Boundary

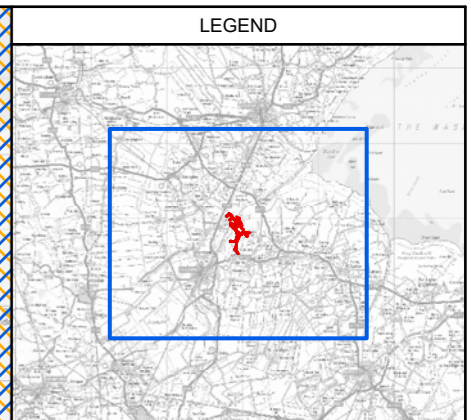
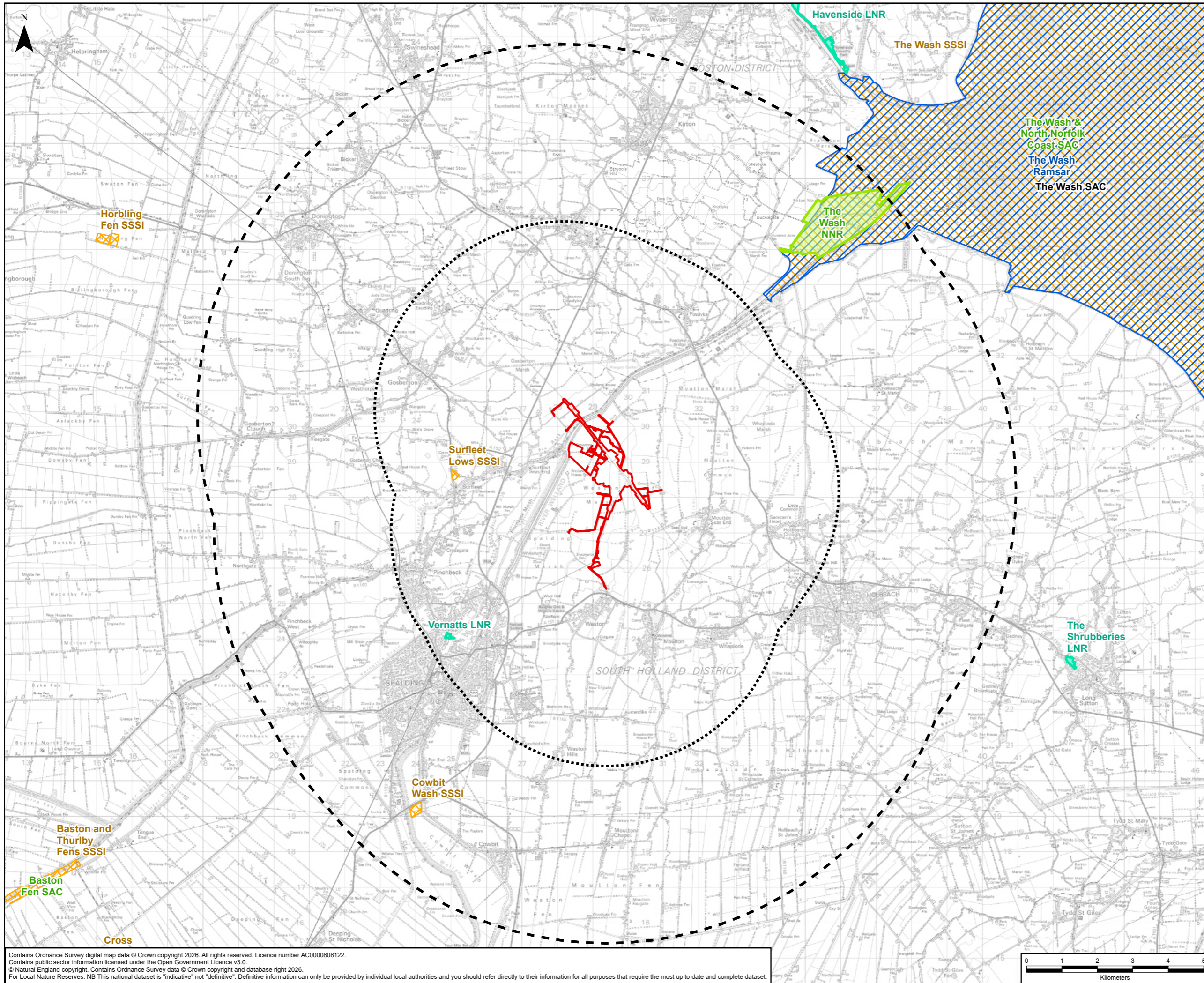
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## Figure 2 Designated Sites



**LEGEND**

- Scheme Site Boundary
- Scheme Site Boundary - 5km Buffer
- Scheme Site Boundary - 10km Buffer
- SSSI
- LNR
- NNR
- SPA
- SAC
- Area of overlapping SSSI, Ramsar, SAC and SPA

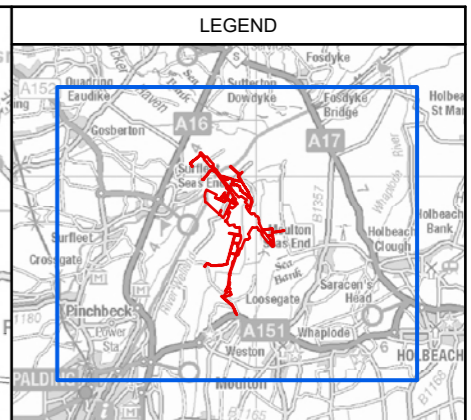
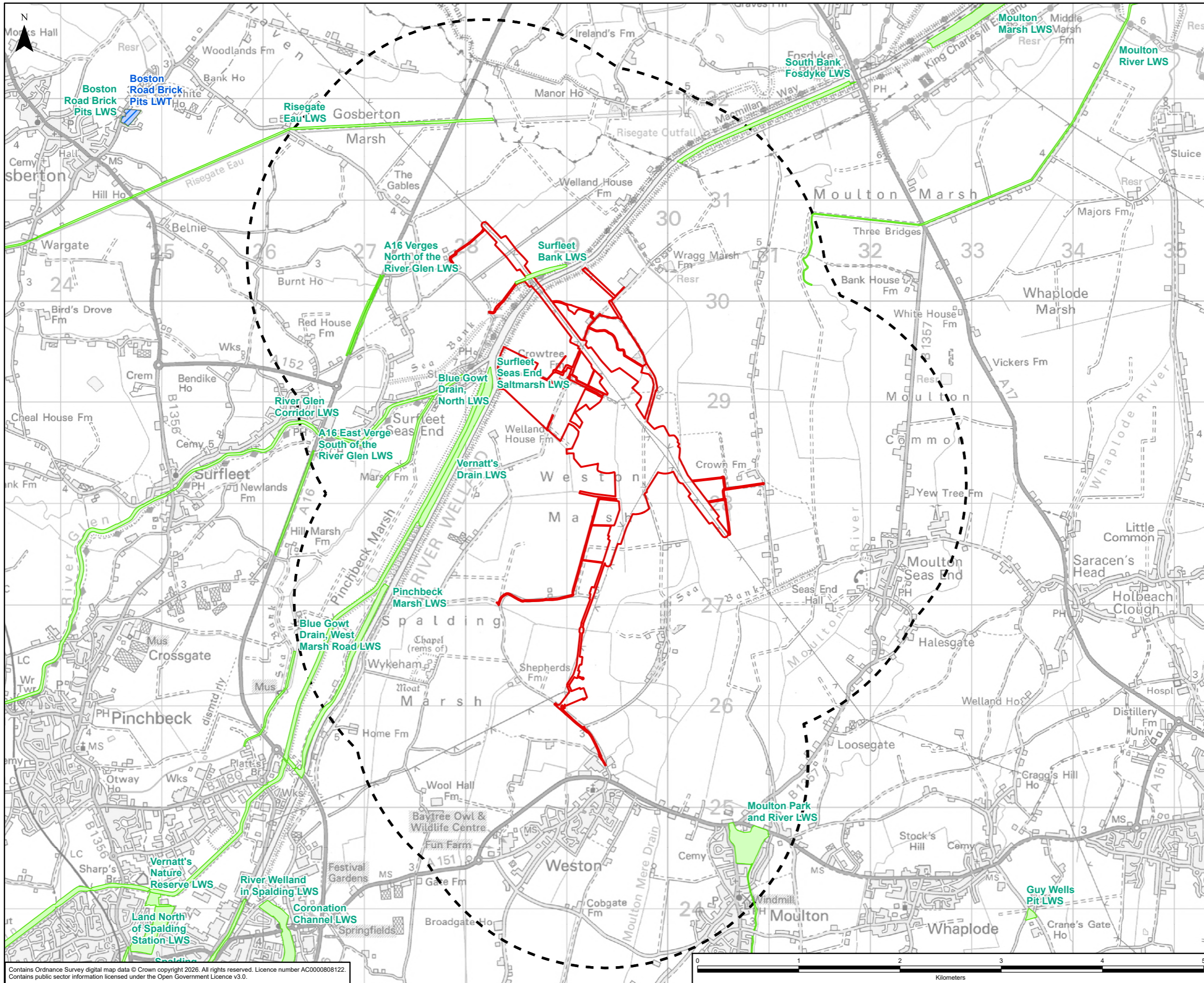
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 For Local Nature Reserves: NB This national dataset is "indicative" not "definitive". Definitive information can only be provided by individual local authorities and you should refer directly to their information for all purposes that require the most up to date and complete dataset.



## Figure 3 Non-Statutory Sites



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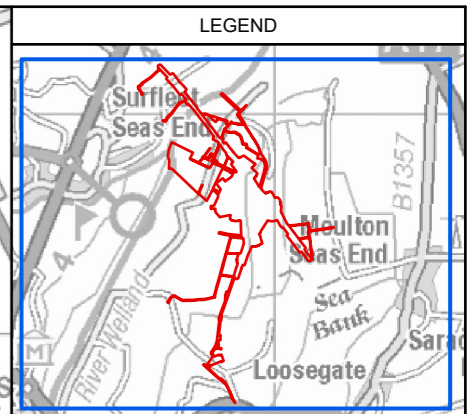
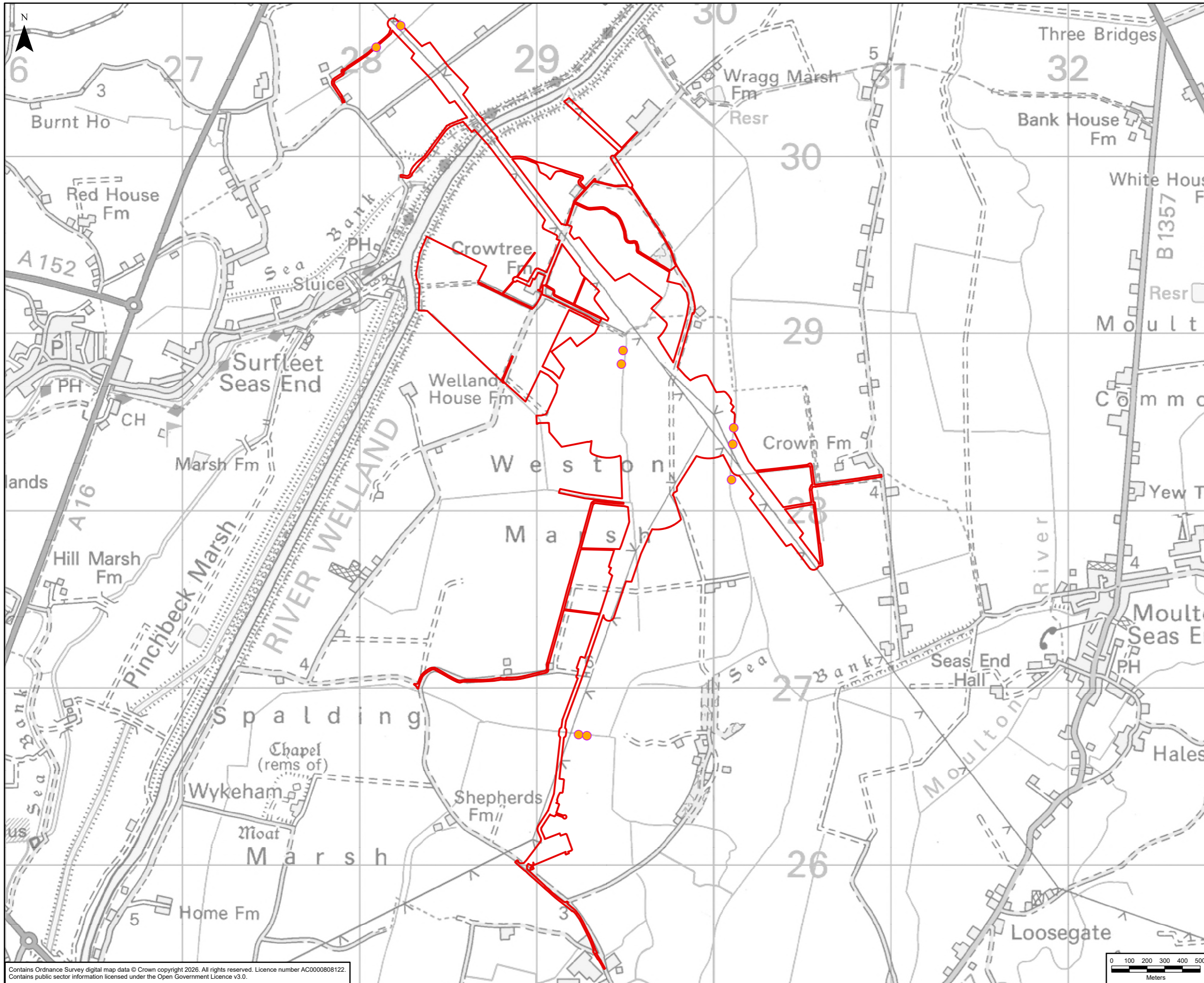
- Scheme Site Boundary
- Scheme Site Boundary - 2km Buffer
- Local Wildlife Site
- Lincolnshire Wildlife Trust

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## **Figure 4 Macroinvertebrate Survey Locations**



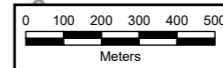
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- Scheme Site Boundary
- Macroinvertebrate Sample

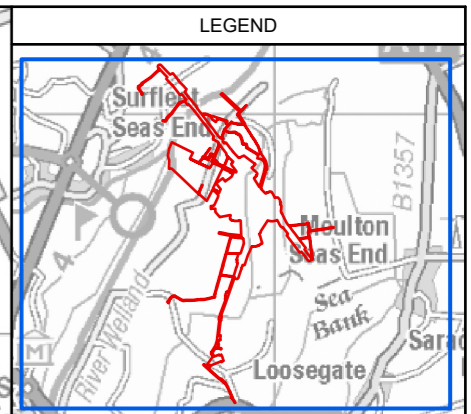
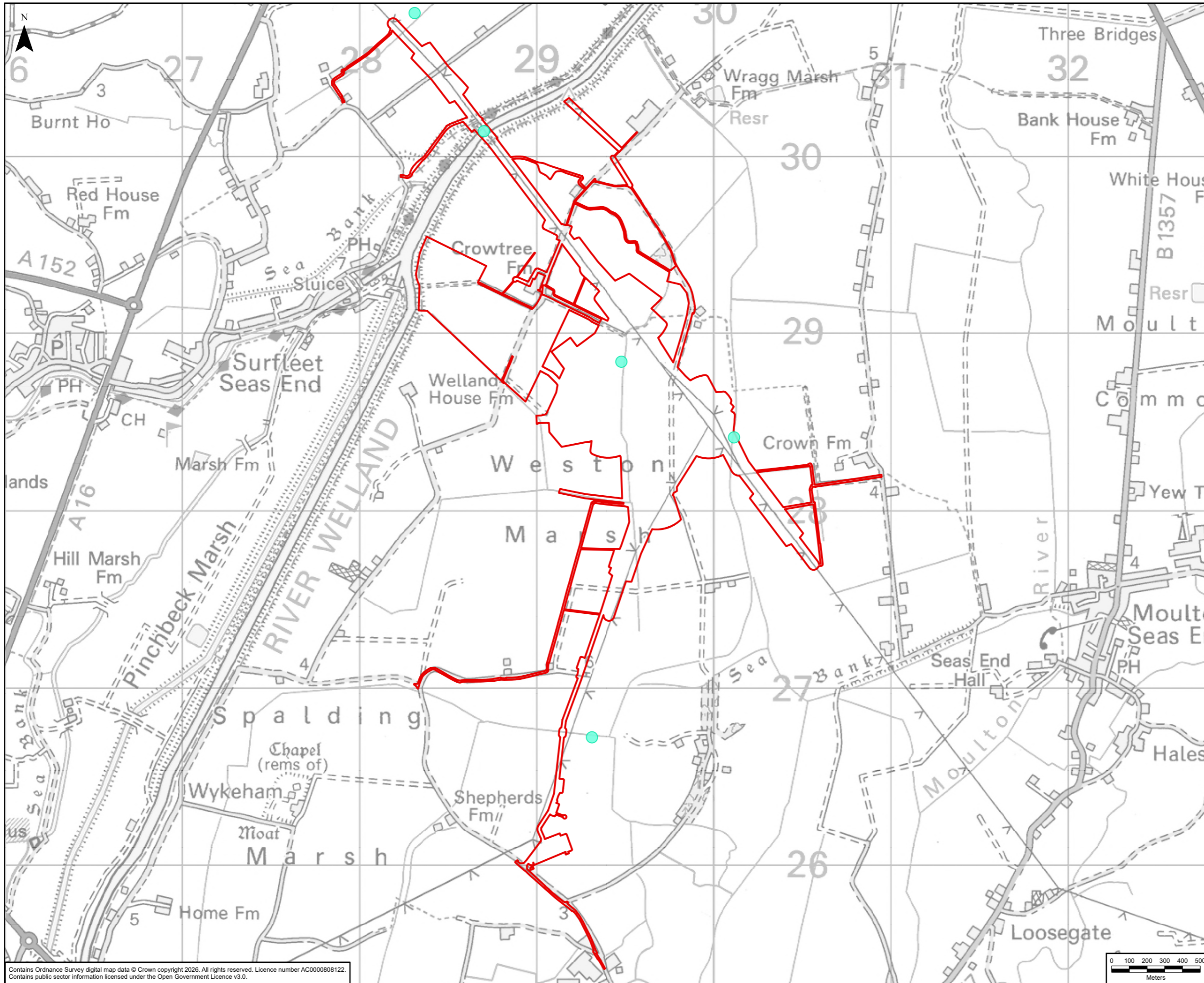
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## Figure 5 Macrophyte Survey Locations



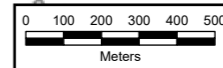
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- Macrophyte Crossing Point

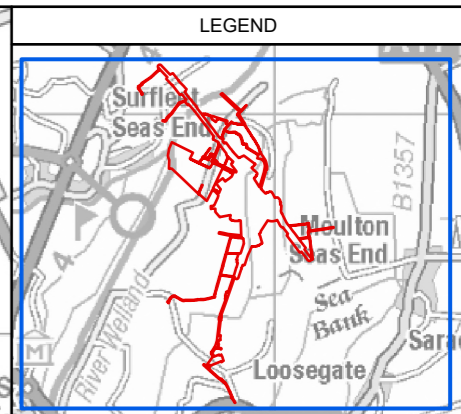
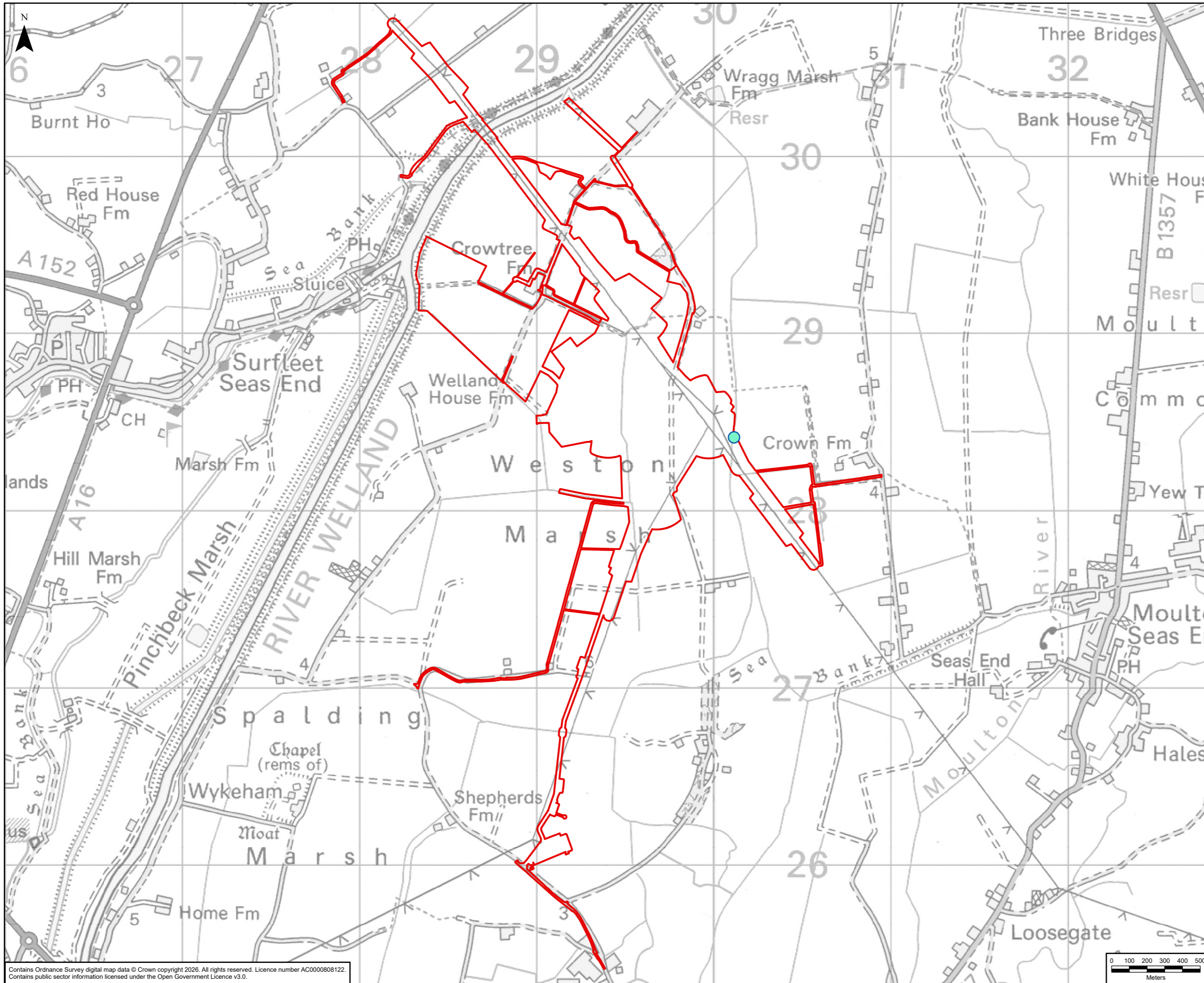
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## Figure 6 Fish Survey Locations



**LEGEND**

- Scheme Site Boundary
- Fish Survey Location (Crossing Point)

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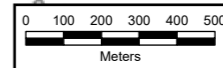
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Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

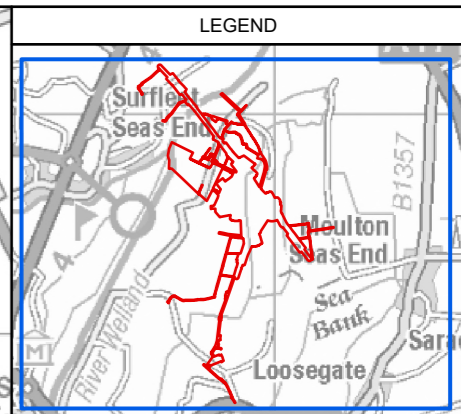
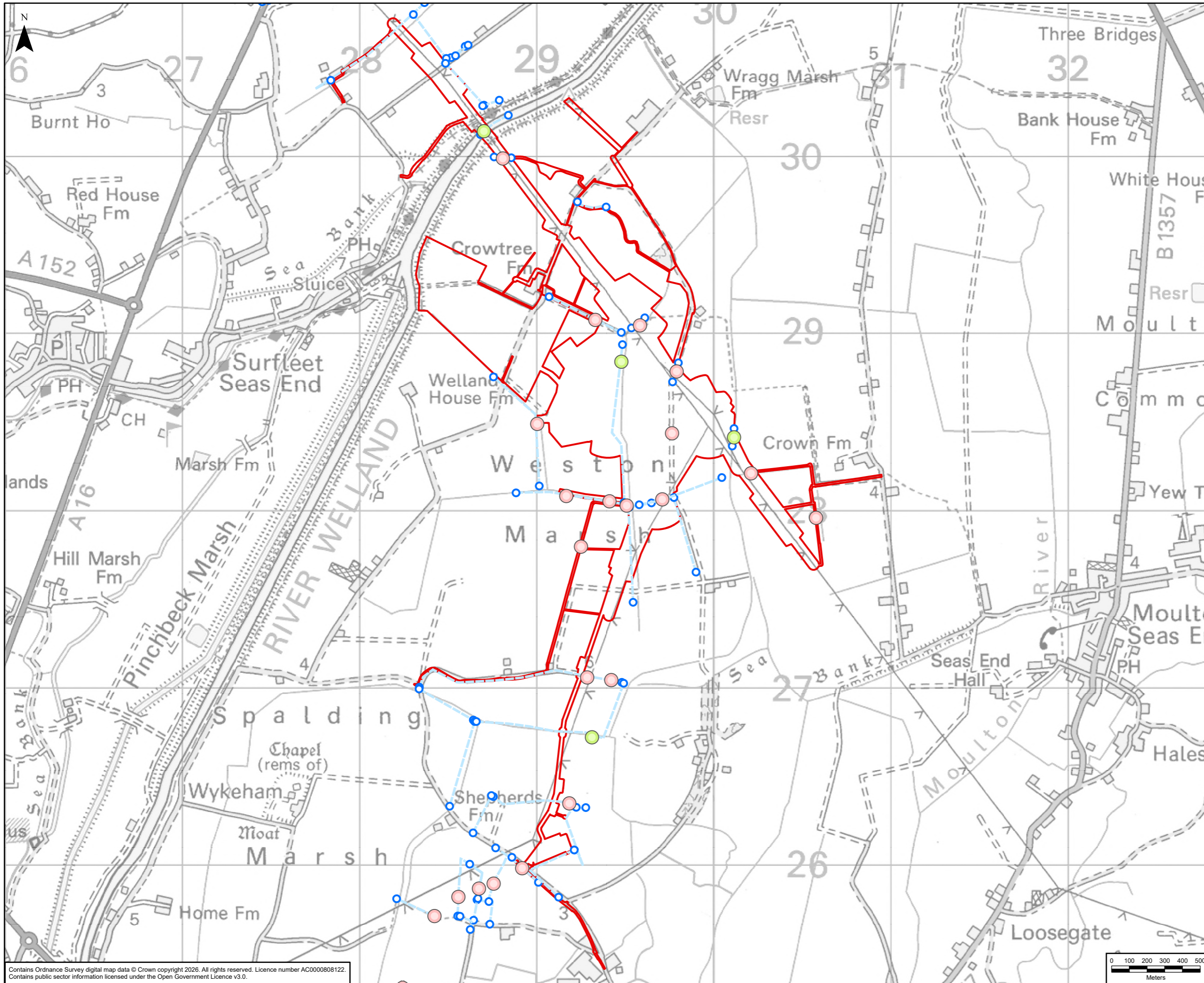
Document Title: **FIGURE 6 FISH SURVEY LOCATIONS**

Creator: LC	Date: 01/05/2026	Checker: KA	Date: 01/05/2026	Approver: DR	Date: 01/05/2026
Document Type: FIGURE	Scale: 1:20,000	Format: A3	Sheets: 1 OF 1	Rev: A	

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## **Figure 7 Aquatic Scoping Survey Locations**

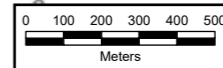


- LEGEND**
- ▭ Scheme Site Boundary
  - Aquatic Habitat Appraisal Survey Location
  - Scoped In
  - Scoped Out

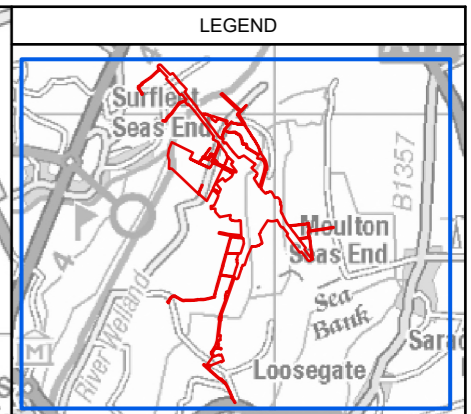
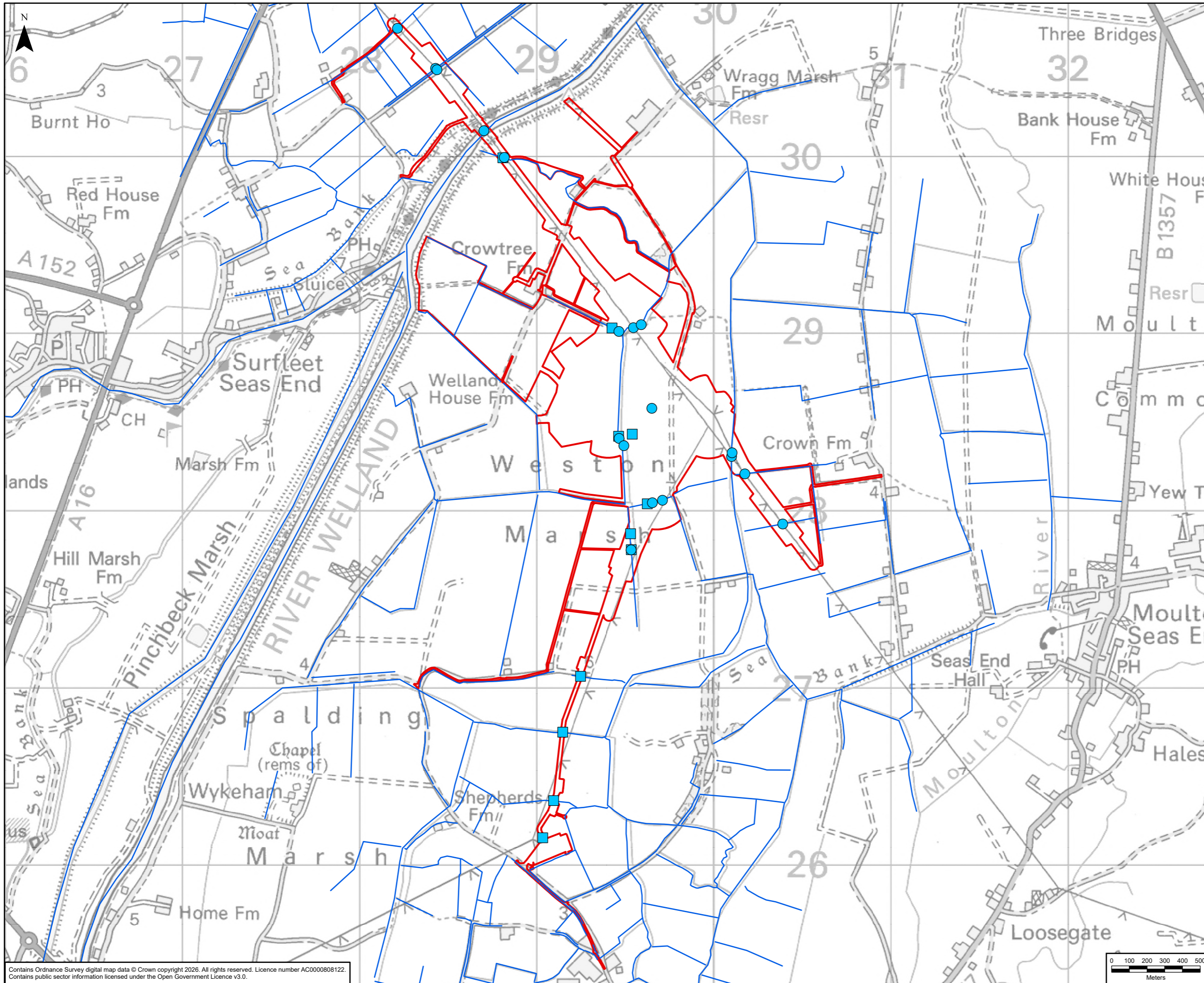
A	01/05/2026	First Issue	LC	KA	NM
Rev	Date	Description	GIS	Chk	App

<b>nationalgrid</b>					
Purpose: CONSENTING OVERVIEW					
Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH					
Document Title: FIGURE 7 AQUATIC SCOPING SURVEY LOCATIONS					
Creator:	Date:	Checker:	Date:	Approver:	Date:
LC	01/05/2026	KA	01/05/2026	DR	01/05/2026
Document Type:	Scale:	Format:	Sheets:	Rev:	
FIGURE	1:20,000	A3	1 OF 1	A	

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## Figure 8 Watercourse Crossing Points



- Legend**
- ▭ Scheme Site Boundary
  - Watercourse
  - Water Crossing - OHL
  - Water Crossing

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Rev	Date	Description	GIS	Chk	App

**nationalgrid**

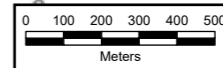
Purpose: CONSENTING OVERVIEW

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

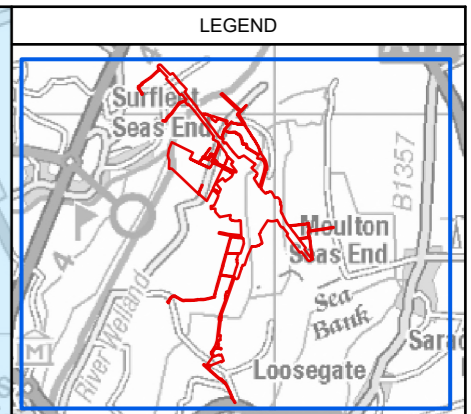
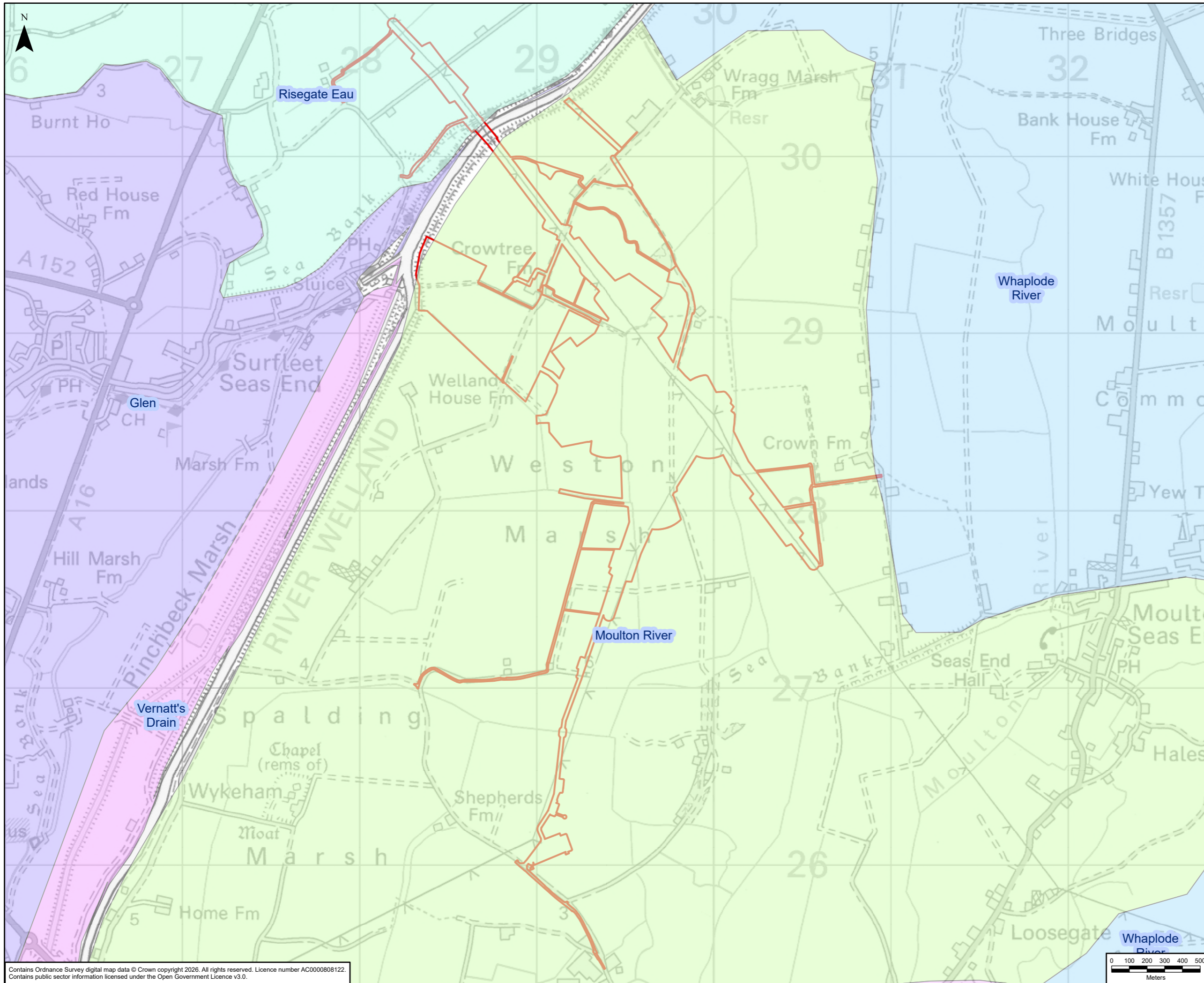
Document Title: FIGURE 8 WATERCOURSE CROSSING POINTS

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## **Figure 9 Water Framework Directive Catchments**



- LEGEND**
- Scheme Site Boundary
  - Water Framework Directive (WFD) River Water Body Catchments Cycle 3
  - Glen
  - Moulton River
  - Risegate Eau
  - South Holland Main Drain
  - Vernatt's Drain
  - Whaplode River

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Rev	Date	Description	GIS	Chk	App

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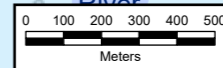
Purpose: CONSENTING OVERVIEW

Scheme: PROPOSED ELECTRICITY SUBSTATION AND OVERHEAD LINE WORKS AT WESTON MARSH

Document Title: FIGURE 9 WATER FRAMEWORK DIRECTIVE CATCHMENTS

Creator: LC	Date: 01/05/2026	Checker: KA	Date: 01/05/2026	Approver: DR	Date: 01/05/2026
Document Type: FIGURE	Scale: 1:20,000	Format: A3	Sheets: 1 OF 1	Rev: A	

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## Appendix A Sites Scoped out of Further Aquatic Surveys



Photo of WM-WCX-1. Ditch was dry.



Photo of WM-WCX-1a. Ditch was dry.



Photo of TCPA-OHL-WCX-18. Ditch was dry



Photo of WM-WCX-7. Ditch was dry.



Photo of TCPA-OHL-WCX-12 & 13. Ditch was Dry.



Photo of WM-WCX-18. Ditch was dry.



Photo of TCPA-OHL-WCX 7& 8. Heavily managed ditch dominated by terrestrial species and very little water.



Photo of WM-WCX-20. Ditch was dry



Photo of TCPA-OHL-WCX-18. Ditch was dry.

# Appendix B Macroinvertebrate taxa list

Table B.1 Macroinvertebrate Species identified in Spring Surveys

Family	Previous species name	Species	LW-WCX-256	LW-WCX-258	RJ-WCX-10	RJ-WCX-18
<b>Snails</b>						
Lymnaeidae	Lymnaeidae (juvenile / damaged)	Lymnaeidae (juvenile / damaged)			25	
Lymnaeidae	<i>Radix balthica</i>	<i>Ampullaceana balthica</i>		2	20	1
Lymnaeidae	<i>Galba truncatula</i>	<i>Galba truncatula</i>	5			
Hydrobiidae	<i>Potamopyrgus antipodarum</i>	<i>Potamopyrgus antipodarum</i>	1	6	60	
Bithyniidae	<i>Bithynia tentaculata</i>	<i>Bithynia tentaculata</i>		12	12	
Physidae	<i>Physella sp.</i>	<i>Physella sp.</i>			2	
Planorbidae	<i>Planorbis sp.</i>	<i>Planorbis sp.</i>			2	
<b>Limpets and mussels</b>						
Sphaeriidae	<i>Pisidium sp.</i>	<i>Pisidium/Euglesa/Odhneripisidium</i>		20		
<b>Worms</b>						
Oligochaeta	<i>Oligochaeta</i>	<i>Oligochaeta</i>		20	2	1
Leeches						
Glossiphoniidae	<i>Helobdella stagnalis</i>	<i>Helobdella stagnalis</i>		3		
<b>Crustaceans</b>						
Ostracoda			30			
Gammaridae	<i>Gammaridae</i>	<i>Gammaridae</i>				1
Gammaridae	<i>Gammarus sp.</i>	<i>Gammarus sp.</i>		3	30	
Gammaridae	<i>Gammarus tigrinus</i>	<i>Gammarus tigrinus</i>			16	
Gammaridae	<i>Gammarus zaddachi</i>	<i>Gammarus zaddachi</i>		1	6	
Crangonyctidae	<i>Crangonyx sp. (floridanus/pseudogracilis)</i>	<i>Crangonyx sp. (floridanus/pseudogracilis)</i>			20	
Asellidae	<i>Asellus sp.</i>	<i>Asellus sp. / Proasellus sp.</i>		2	10	

Asellidae	<i>Asellus aquaticus</i>	<i>Asellus aquaticus</i>				9
Asellidae	<i>Asellus meridianus</i>	<i>Proasellus meridianus</i>				3
Mayflies						
Baetidae	<i>Cloeon dipterum</i>	<i>Cloeon dipterum</i>	6	140	1	
<b>Damselflies</b>						
Coenagrionidae	<i>Coenagrionidae</i> (juvenile / damaged)	<i>Coenagrionidae</i> (juvenile / damaged)				1
<b>True bugs</b>						
Corixidae	<i>Sigara</i> sp.	<i>Sigara</i> sp.	3	1		
Corixidae	<i>Sigara dorsalis</i>	<i>Sigara dorsalis</i>	2	1		
<b>Beetles</b>						
Halplidae	<i>Halplus immaculatus</i>	<i>Halplus immaculatus</i>				1
Halplidae	<i>Halplus lineaticollis</i>	<i>Halplus lineaticollis</i>	1	5		
Halplidae	<i>Halplus ruficollis</i>	<i>Halplus ruficollis</i>				1
Hygrobiidae	<i>Hygrobia hermanni</i>	<i>Hygrobia hermanni</i>				1
Gyrinidae	<i>Gyrinus</i> sp.	<i>Gyrinus</i> sp.				1
Dytiscidae	<i>Dytiscidae</i> (larvae / damaged)	<i>Dytiscidae</i> (larvae / damaged)	6	2	9	
Hydrophilidae	<i>Hydrophilidae</i> (larvae / damaged)	<i>Hydrophilidae</i> (larvae / damaged)				1
Hydrophilidae	<i>Helophorus</i> sp.	<i>Helophorus</i> sp.	1			
Hydrophilidae	<i>Hydrobius fuscipes</i>	<i>Hydrobius fuscipes</i>	1			
Hydrophilidae	<i>Anacaena globulus</i>	<i>Anacaena globulus</i>				1
Hydrophilidae	<i>Anacaena limbata</i>	<i>Anacaena limbata</i>	3			
<b>Trueflies</b>						
Chironomidae	<i>Chironomidae</i> (damaged / pupa)	<i>Chironomidae</i> (damaged / pupa)				15
Chironomidae	<i>Tanypodinae</i>	<i>Tanypodinae</i>	30	15		
Chironomidae	<i>Orthoclaadiinae</i>	<i>Orthoclaadiinae</i>	30	370	200	4
Chironomidae	<i>Chironomini</i>	<i>Chironomini</i>			30	2
Chironomidae	<i>Tanytarsini</i>	<i>Tanytarsini</i>			8	
Empididae					6	

Ceratopogonidae				1
Stratiomyidae	<i>Stratiomyidae</i>	<i>Stratiomyidae</i>	1	1
Tabanidae				2
<b>Other Taxa</b>				
Microturbellaria			2	
Diptera				1
<i>Eiseniella</i> <i>Tetraedra</i>			1	

Table B.2 Macroinvertebrate Species identified in Autumn Surveys

Family	Previous species name	Species	LW- WCX- 258	RJ- WCX- 10
<b>Snails</b>				
Lymnaeidae	Lymnaeidae (juvenile / damaged)	Lymnaeidae (juvenile / damaged)	5	
Lymnaeidae	<i>Lymnaea stagnalis</i>	<i>Lymnaea stagnalis</i>	2	
Lymnaeidae	<i>Radix balthica</i>	<i>Ampullaceana balthica</i>	195	80
Hydrobiidae	<i>Potamopyrgus antipodarum</i>	<i>Potamopyrgus antipodarum</i>	439	2700
Bithyniidae	<i>Bithynia sp.</i>	<i>Bithynia sp.</i>	21	
Bithyniidae	<i>Bithynia tentaculata</i>	<i>Bithynia tentaculata</i>	189	300
Physidae	<i>Physella sp.</i>	<i>Physella sp.</i>	92	30
Planorbidae	<i>Planorbis sp.</i>	<i>Planorbis sp.</i>	1	
Planorbidae	<i>Planorbis planorbis</i>	<i>Planorbis planorbis</i>	2	5
<b>Limpets and mussels</b>				
Sphaeriidae	<i>Pisidium sp.</i>	<i>Pisidium/Euglesa/Odhneripisidium</i>	61	1
<b>Worms</b>				
Oligochaeta	<i>Oligochaeta</i>	<i>Oligochaeta</i>	39	10
<b>Leeches</b>				
Glossiphoniidae	<i>Glossiphonia sp.</i>	<i>Glossiphonia sp.</i>	5	
<b>Crustaceans</b>				

<b>Family</b>	<b>Previous species name</b>	<b>Species</b>	<b>LW- WCX- 258</b>	<b>RJ- WCX- 10</b>
Gammaridae	<i>Gammarus sp.</i>	<i>Gammarus sp.</i>	16	
Gammaridae	<i>Gammarus zaddachi</i>	<i>Gammarus zaddachi</i>	8	15
Crangonyctidae	<i>Crangonyx sp.</i> ( <i>floridanus/pseudogracilis</i> )	<i>Crangonyx sp.</i> ( <i>floridanus/pseudogracilis</i> )		7
Asellidae	Asellidae	Asellidae	2	
Asellidae	<i>Asellus aquaticus</i>	<i>Asellus aquaticus</i>		95
<b>Mayflies</b>				
Baetidae	Baetidae (juvenile / damaged)	Baetidae (juvenile / damaged)		1
Baetidae	<i>Cloeon dipterum</i>	<i>Cloeon dipterum</i>		1
<b>Damselflies</b>				
Coenagrionidae	Coenagrionidae (juvenile / damaged)	Coenagrionidae (juvenile / damaged)	10	1
Coenagrionidae	<i>Ischnura elegans</i>	<i>Ischnura elegans</i>	1	
Coenagrionidae	<i>Coenagrion sp.</i>	<i>Coenagrion sp.</i>	1	
<b>True bugs</b>				
Corixidae	<i>Sigara sp.</i>	<i>Sigara sp.</i>	6	
Corixidae	<i>Sigara dorsalis</i>	<i>Sigara dorsalis</i>		15
Notonectidae	<i>Notonecta glauca</i>	<i>Notonecta glauca</i>	1	1
<b>Beetles</b>				
Halplidae	<i>Halplus lineaticollis</i>	<i>Halplus lineaticollis</i>	22	1
Hygrobiidae	<i>Hygrobia hermanni</i>	<i>Hygrobia hermanni</i>		2
Dytiscidae	<i>Hydroporus palustris</i>	<i>Hydroporus palustris</i>		1
Dytiscidae	<i>Agabus sturmii</i>	<i>Agabus sturmii</i>	1	
Noteridae	<i>Noterus clavicornis</i>	<i>Noterus clavicornis</i>		1
<b>Alderflies</b>				
Sialidae	Sialidae (juvenile / damaged)	Sialidae (juvenile / damaged)		
Sialidae	<i>Sialis lutaria</i>	<i>Sialis lutaria</i>		6

<b>Family</b>	<b>Previous species name</b>	<b>Species</b>	<b>LW- WCX- 258</b>	<b>RJ- WCX- 10</b>
<b>Caddisflies</b>				
Leptoceridae	<i>Athripsodes sp.</i>	<i>Athripsodes sp.</i>	1	
<b>Trueflies</b>				
Chironomidae	Chironomidae (damaged / pupa)	Chironomidae (damaged / pupa)		1
Chironomidae	Tanypodinae	Tanypodinae	4	6
Chironomidae	Orthocladiinae	Orthocladiinae		4
Chironomidae	Chironomini	Chironomini	7	30
Ptychopteridae	<i>Ptychoptera sp.</i>	<i>Ptychoptera sp.</i>		7
<b>Other Taxa</b>				
Diptera			1	

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