

Ørsted

**Greenhills Renewable Energy
Park, Co. Cork**

Screening for Appropriate Assessment and Natura Impact Statement

December 2025

This report considers the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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The findings outlined within this report and the data we have provided are to our knowledge true and express our bona fide professional opinions. This report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) good practice guidelines. Where pertinent CIEEM Guidelines used in the preparation of this report include the *Guidelines for Ecological Report Writing* (CIEEM, 2017a), *Guidelines for Preliminary Ecological Appraisals* (CIEEM, 2017b) and *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*, (CIEEM, 2024). CIEEM Guidelines include model formats for Preliminary Ecological Appraisal and Ecological Impact Assessment. Also, where pertinent, evaluations presented herein take cognisance of recommended Guidance from the EPA such as *Guidelines on the information to be contained in Environmental Impact Assessment Reports* (EPA, 2022), and in respect of European sites, *Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC* (European Commission, 2018).

Due cognisance has been given at all times to the provisions of the *Wildlife Acts 1976-2024*, the *European Union (Natural Habitats) Regulations*, the *European Communities (Birds and Natural Habitats) Regulations 2011-2021*, EU Regulation on Invasive Alien Species under *EU Regulation 1143/2014*, the *EU Birds Directive 2009/147/EC* and *Habitats Directive 92/43/EEC*.

No method of assessment can completely remove the possibility of obtaining partially imprecise or incomplete information. Any limitation to the methods applied or constraints however are clearly identified within the main body of this document.

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Notice

This report was produced by INIS Environmental Consultants Ltd. (INIS) on behalf of Ørsted, the client, for the specific purpose of undertaking an Appropriate Assessment for a Proposed Development at the Greenhills Energy Park, with all reasonable skill, care and due diligence within the terms of the contract with the client, incorporating our terms and conditions and taking account of the resources devoted to it by agreement with the client.

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1. INTRODUCTION

This combined Appropriate Assessment (AA) Screening Report and Natura Impact Statement (NIS) has been prepared by Inis Environmental Consultants Ltd. (INIS) and contains information which will facilitate the Competent Authority in establishing whether the Proposed Development at the Greenhills Renewable Energy Park, Co. Cork, will have an adverse effect on the integrity of European sites, either alone or in combination with other plans and projects.

The initial element of this report is AA Screening (Stage 1), which assesses potential connectivity between the Proposed Development and European sites and determines if there are any Likely Significant Effects (LSEs) of the Proposed Development within the Natura 2000 network of designated European sites.

Where the likelihood or significance of effects are unknown, ambiguous or are considered likely in view of the Qualifying Interests (QIs) or Special Conservation Interests (SCIs) and the respective Site-Specific Conservation Objectives (SSCOs) of relevant European sites, they cannot be screened out during Stage 1. In this case, Appropriate Assessment (Stage 2, also known as a NIS) is required to identify any potential adverse effects on the integrity of the European sites.

Where Appropriate Assessment identifies the potential for adverse effects on the integrity of a European site, the NIS section of this report prescribes mitigation measures in relation to the identified adverse effects on the site's integrity. This report is conducted in line with the requirements of Article 6(3) of the EU Habitats Directive (92/43/EEC) and the National Parks and Wildlife Service (NPWS) Guidance for Planning Authorities (2010).

1.1. Legislative Context

Approximately 10% of the land area of Ireland is included within the network of European Sites, which includes Special Protection Areas (SPAs) to protect important areas for birds, and Special Areas of Conservation (SACs) to protect a range of habitats and species. Legal protection for these sites is provided by the Birds Directive and Habitats Directive, (as amended), which are jointly transposed into Irish law by the European Communities (Birds and Natural Habitats) Regulations 2011 (as amended).

Article 6(3) of the Habitats Directive requires that, in relation to European designated sites (i.e. SACs and SPAs that form the Natura 2000 network):

"any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives (COs)".

These obligations in relation to AA have been implemented in Ireland under Part XAB of the Planning and Development Act 2000, as amended ("the 2000 Act"), and in particular Section 177U and Section 177V thereof. The relevant provisions of Section 177U in relation to AA screening have been set out below:

"177U.— (1) A screening for appropriate assessment of a draft Land use plan or application for consent for Proposed Development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that Land use plan or Proposed Development,

individually or in combination with another plan or project is likely to have a significant effect on the European site.

(4) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is required if it cannot be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site.

(5) The competent authority shall determine that an appropriate assessment of a draft Land use plan or a Proposed Development, as the case may be, is not required if it can be excluded, on the basis of objective information, that the draft Land use plan or Proposed Development, individually or in combination with other plans or projects, will have a significant effect on a European site."

A competent authority (e.g. a Local Authority) can only agree to a plan or project after having determined that it will not adversely affect the integrity of the site concerned. Under article 6(4) of the Directive, if adverse impacts are likely, and in the absence of alternative options, a plan or project may nevertheless proceed for imperative reasons of overriding public interest (IROPI), including social or economic reasons.

A Member State is required to take all compensatory measures necessary to ensure the overall integrity of the European site. The European Commission must be informed of any compensatory measures adopted, unless a priority habitat type or species is present and in which case an opinion from the European Commission is required beforehand (unless for human health or public safety reasons, or of benefit to the environment).

This report has been prepared with regard to the following legislation:

- Directive 92/43/EC (as amended) of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the "Habitats Directive");
- Directive 2009/147/EC (as amended) of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (the "Birds Directive");
- European Communities (Birds and Natural Habitats) Regulations 2011-2021 (as amended); and
- Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats Directive' 92/43/EEC, (European Commission, 2018);
- Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment; and
- Directive 2014/52/EU of the European Parliament and to the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

1.2. Statement of Authority

1.2.1. Authors

Katie-Ruth Connolly MSc BSc (Assistant Ecologist, INIS): Katie is an assistant ecologist on the Report Team at INIS and drafted this report. She is a Qualifying member of the Chartered Institute of Ecology

and Environmental Management. Katie has experience writing AA Screening reports for civil development projects since 2024, and renewable energy projects since 2025.

Conor Daly MSc BSc ACIEEM (Ecologist, INIS): Conor is the Report Team lead and reviewed this report. Conor has experience writing AA Screening and NIS reports since 2021 for small urban developments across Ireland involving sensitive receptors such as Lesser Horseshoe Bat, and sensitive SAC riverine habitats.

Dr Alex Copland BSc PhD MEnvSc MCIEEM (Technical Director, INIS) reviewed this report. Alex has over 30 years of professional experience working in both statutory and private companies, in third-level research institutions and with environmental NGOs. He is a full member of the Institute of Environmental Sciences (IES) and the CIEEM. He is proficient in experimental design and data analysis and has managed several large-scale, multi-disciplinary ecological projects, managing staff and resources to meet budgetary constraints and the successful delivery of projects on time.

1.2.2. Field Workers

Daelyn Purcell BSc (Ecologist, INIS): Daelyn serves as ecologist and conducted habitat walkovers, invasive species walkovers, bat emergence surveys and field assessments for the Proposed Development. Daelyn's expertise lies within the area of ornithology with six years' experience conducting various ornithological surveys in line with best practice guidelines through Inis Environmental, other various Ecological Consultancies and has worked on several conservation projects with BirdWatch Ireland in previous years. Daelyn also has experience with terrestrial mammal surveys and habitat classification. Daelyn is also a Qualifying member of CIEEM.

Chris McKiernan BSc ACIEEM (Ecologist, INIS): Chris is an ecologist and conducted Irish wetland bird surveys (I-WeBS) and Vantage Point (VP) surveys for the Proposed Development. Chris has over 4 years of experience carrying out professional ornithology surveys in Ireland on a variety of projects. Chris has been heavily involved in carrying out and coordinating hen harrier surveys with INIS, for both breeding and wintering. Chris also carried out many of the other surveys for INIS, including VP surveys, I-WeBS, Woodcock surveys, Red Grouse surveys, Breeding Raptor (Kestrel, Peregrine, Barn Owl, Merlin) surveys, and countryside bird survey (CBS) transects.

1.3. Constraints and Limitations

The environmental outline and baseline ecology information for this AA was based on information provided by the Client regarding the site layout with desk study information sourced from several governmental body and ecological databases and extensive field studies for all likely ecological receptors following best practice guidance to inform the receiving environment. The information provided in this report accurately and comprehensively describes the ecological baseline of the Proposed Development and provides a prediction of the likely ecological effects of the Proposed Development, along with prescriptions for mitigation. The specialist studies, analysis, reporting, and assessment methodologies have all been undertaken in accordance with the appropriate guidelines.

There are a number of limitations inherent to field-based surveying. These particularly relate to suitable weather conditions for completing surveys, with good visibility and little wind or rain being of paramount importance for recording birds. When undertaking and completing fieldwork, careful consideration and planning is required to ensure optimal weather conditions during survey periods.

The field surveys for the data presented here were all undertaken during suitable weather conditions, so no constraints or limitations with regards to weather conditions are considered likely.

2. DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1. Location of the Proposed Development

The Proposed Development is located 7km northwest of Youghal, Co. Cork and 6.5km northeast of Killeagh, Co. Cork. It is bounded by the R634 to the north, and the Park Hill road runs between the eastern and western areas of the site. The general location of the site is shown in **Figure 2.1**, where the study area is outlined in red. The Tourig River (18T03), Ballyneague River (18B47) and Knocknagappagh River (18K42) run through the Proposed Development site boundary to the west, the Youghal Park (18Y01) and Ballyglavin Rivers (18B67) flow south of the Proposed Development site southern boundary. The Carriganass River (18C30) flows through the Proposed Development from the north. These rivers are part of the Tourig_020 sub-basin (IE_SW_18T030700) (**Figure 2.1**). The Proposed Development is located 2.01km from the Blackwater River (Cork/Waterford) SAC and 2.1km from the Blackwater Estuary SPA (**Figure 4.1 and 4.2, Table 4.2**).

2.2. Description of the Proposed Development

Designs, elevations, and boundaries were provided by the Client and are detailed in **Planning Drawing Package submitted as part of the planning application**.

The Proposed Development comprises a solar farm, inverter/transformer stations, site entrances and access tracks, battery energy storage system (BESS), 220kV AIS substation and loop-in grid connection, and all ancillary development in the townlands of Knocknagappagh, Barnaviddane, Ballyneague, Ballydaniel, Youghalpark, Ballydaheen and Cornaveigh in Co. Cork. The solar array element of the Proposed Development will cover an area of circa 323ha and will consist of ground mounted solar panels on supporting frames, causing minimal ground disturbance, arranged in solar array field parcels aligned with the site topography. The ground mounted frames will be installed by simple screw or pile driving following geotechnical assessment, thereby minimising ground disturbance. Where ground conditions require, concrete or ballast footing may be required, though this is expected to be minimal. These will be removed upon decommissioning of the solar farm and taken offsite for reuse elsewhere, recycling, or disposal at a licenced waste facility, as appropriate.

Solar panel modules will be sized 1.1-1.5m by 2-2.5m. Panels may be fixed in either a landscape or portrait orientation, depending on detailed engineering design and contractor preference.

The angle of the panels will range from 10-25 degrees. These are shown in **Planning Drawing No. 7353-PL-501**.

Pitch (distance between the back of one table to the back of the adjacent table) between the tables will range from 6.5-14m and the angle (10-25 degrees) will allow light to reach the ground and vegetation to grow underneath.

A 10-year planning permission and 40-year operational life from the date of commissioning of the entire Proposed Development is being sought.

It is envisaged that construction will take approximately 21 months to complete. However, this is subject to various factors including weather conditions. The timeline includes preliminary works such as detailed design and marking out.

Deliveries of project components are scheduled from August 2027 to June 2028 depending on the element of the Proposed Development under construction.

The main construction activities, which includes civil engineering, fencing, tracks, compounds, hardstands, drainage, substation, and BESS is scheduled for the period September 2027 to September 2028.

2.2.1. Construction

2.2.1.1. Installation of Solar Panels

Construction of the solar PV panel installation will also entail:

- Installation on ground mounted frames (driven into the ground attached driven steel piles), installation of precast concrete ballast foundations where required (expected to be minimal);
- Excavation of trenches for cables connecting solar panels to inverter/transformers, to join the land parcels and to connect the solar farm to the proposed 220kV AIS Substation;
- Erection of the stock proof fencing and gates;
- Laying of stone and concrete beams/plinths for inverter/transformers, crane hardstands and RMU;
- Installation of solar panels;
- Placing containers and inverter/transformers and RMU;
- Landscaping;
- Electrical fit out;
- Installation and testing of all below ground cables including 33kV interconnector cable;
- Energization and start up testing;
- Commissioning and compliance testing; and
- Ancillary infrastructure, including internal access tracks, security fencing, CCTV, lighting, and drainage.

Each solar PV panel will be erected on a galvanised steel support structure/frame. This method of installation causes minimal ground disturbance and occupies less than 1% of the land area.

2.2.1.2. Battery Energy Storage System (BESS)

The proposed BESS will be constructed just south of the proposed 220kV Loop-in substation on the southern side of the existing 220kV Knockraha – Cullenagh Overhead Line. The key construction elements will include:

- Installation of clean water cut off drains around the BESS construction area and temporary spoil storage;

- Construction of the access track from the trackway accessing the substation site to the BESS site and around the BESS itself. This access track will pass under the existing Knockraha-Cullenagh 220KV line and will be constructed around the BESS;
- Topsoil clearance and storage for landscaping purposes;
- Excavation and levelling of the BESS footprint through cut and fill operations;
- Construction of the concrete plinths on which the containers housing the battery units will be placed;
- Construction of the communications building housing electrical components and bunded diesel tank and generator;
- Construction of underground ducting for the BESS electrical cabling to the proposed substation;
- Construction of the drainage network around the BESS and trackway;
- Delivery and installation of the inverters, transformers and containers with battery units using a lift crane from the constructed access trackway;
- Electrical connection to the substation via 3 x 33kV underground cables of circa 350m in length, which will be pulled through the installed cable ducts; and
- Commissioning of the BESS.

2.2.1.3. Substation

The proposed 220kV AIS substation will be constructed just north of the existing 220kV Knockraha – Cullenagh Overhead Line. The key construction elements will include:

- Construction of the access track to the substation site;
- Establishment of the temporary construction compound (this will also serve the construction of the BESS loop-in tower construction);
- Installation of clean water cut off drains around the proposed substation construction area, temporary spoil storage and temporary construction compound area;
- Topsoil clearance and storage for landscaping purposes;
- Excavation and levelling of the Substation footprint through cut and fill operations;
- Associated ground works for the substation platform, Traffos and transformer bays and storage facilities;
- Construction of the EirGrid control building and Greenhills control building housing electrical control and switchgear equipment, bunded diesel tank and generator, welfare facilities and storage;
- Construction of underground ducting for the Substation electrical cabling;
- Construction of the drainage network around the and Substation and construction of the percolation area; and
- Delivery and installation of the transformers, electric switchgear and containers with battery units using a lift crane from temporary crane hardstands.

2.2.1.4. Loop-in Grid Connection to Knockraha-Cullenagh 220kV Overhead Line

The proposed Loop-in grid connection will involve the following construction elements;

- Liaison with EirGrid/ESBN to initiate the existing line outage;
- Temporary disconnection of conductors from tower to be removed;
- Dismantling of the existing intermediary steel tower and removal of materials off site including excavation of foundations and backfilling or removal of concrete foundation to a depth of 300mm below ground level and backfilling with suitable subsoil and topsoil;
- Topsoil clearance and storage for landscaping and reinstatement purposes at the new tower locations;
- Excavation of the tower foundations and temporary storage of topsoil and subsoil separately;
- Formwork for concrete foundations and concrete pouring and curing;
- Erection of the loop-in steel towers using cranes on temporary hardstand;
- Connection of the steel towers to the Traffos in the proposed new substation;
- Connection of the Loop-in towers to the existing 220kV overhead line; and
- Commissioning of the substation and Loop-in connection.

2.2.2. Operations

A 10-year planning permission and 40-year operational life following completion of the construction phase of the Proposed Development and finalisation of grid connection works. During this phase, operational activities will involve general maintenance of elements of the Proposed Development such as the control building which will involve human presence and possible light machinery.

2.2.3. Decommissioning

Decommissioning of the solar farm elements will involve the complete removal of above ground components. Cranes will be used to disassemble each inverter/transformer, and they will be removed from the site. The foundations of the inverter plinths will be removed, and the ground will be covered by soils typical of the surrounding environment and then reseeded or left to re-vegetate according to ecological requirements. Underground cables will be cut back and will be recycled. It is proposed that site access tracks will remain to allow access through the site for farm access, as considered appropriate at the time. Decommissioning the Proposed Development will take approximately 2 months to complete.

Details of decommissioning will be agreed with the local authority prior to any decommissioning taking place. A site-specific Decommissioning Management Plan will be prepared by the Developer for the approval of the Planning Authority before Decommissioning work can commence.

Site materials will be recycled where practicable or disposed of in accordance with waste legislation and best practice guidelines at the time of decommissioning.

As with construction, decommissioning works could result in potential significant effects on identified sensitive receptors. Details of decommissioning will be agreed with the local authority prior to any decommissioning taking place. The potential for effects during the decommissioning phase of the Proposed Development has been fully assessed in the Planning and Environmental Report.

It is envisaged that the Proposed 220kV AIS Substation will be handed over to the Network Operator (EirGrid/ESB Networks), forming part of the national grid and will not be decommissioned.

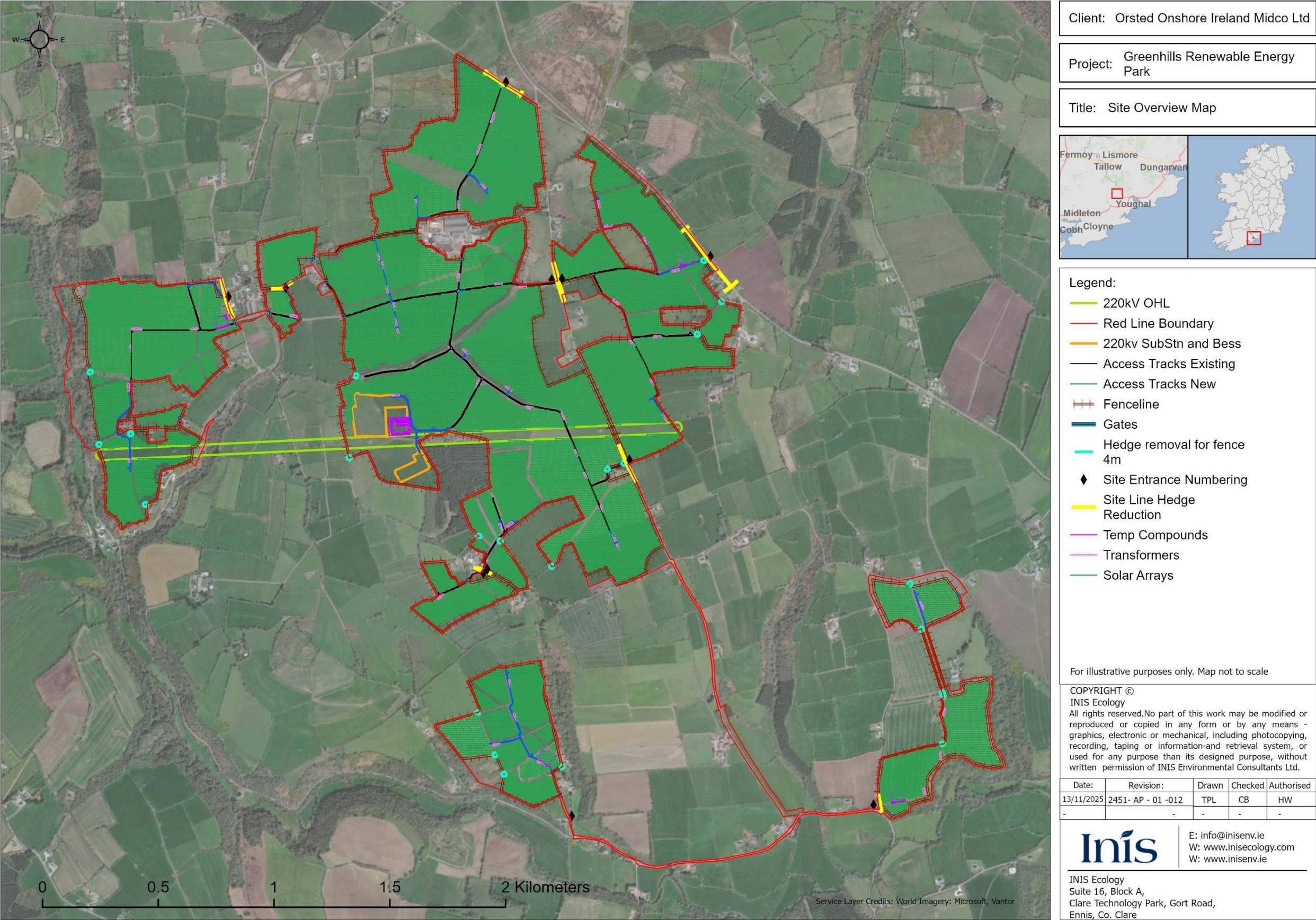


Figure 2.1: Site overview map of the Proposed Development at the Greenhills Energy Park Development, Co. Cork.

3. METHODOLOGY

3.1. Stages of the Appropriate Assessment Process

Guidance on the AA process was produced by the EC in 2002, which was subsequently developed into guidance specifically for Ireland by the DEHLG (2010). These guidance documents identify a staged approach to conducting an AA, as shown in **Figure 3.1**. Each step or stage in the assessment process precedes and provides a basis for other steps. The four stages in an AA, are further described below.

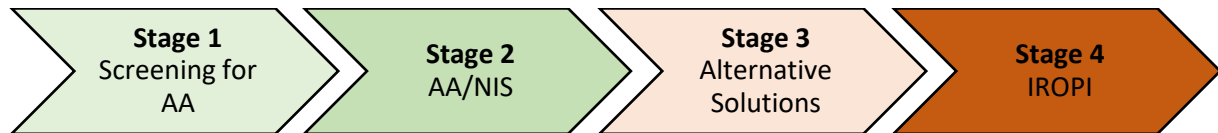


Figure 3.1: The AA Process (from: AA of Plans and Projects in Ireland - Guidance for Planning Authorities, DEHLG, 2010).

3.2. Screening Process

3.2.1. Stage 1 – Screening for AA

The Screening for AA will incorporate the following steps:

- Determining whether a project or plan is directly connected with or necessary to the conservation management of any European sites;
- Describing the project or plan;
- Identifying the European sites potentially affected by the project or plan;
- Identifying and describing any potential effects of the project or plan on European sites, alone, in-combination and cumulatively with other plans/projects; and
- Assessing the likelihood of significant effects on European sites.

This stage examines the likely effects of a project either alone or in combination with other projects upon any Natura 2000 site within the Natura 2000 network and considers whether it can be objectively concluded that these effects will be significant. Stage 1 screening will determine whether an AA/NIS (Stage 2) of the Proposed Development is required. If LSEs of any project cannot be screened out in Stage 1, the process moves to Stage 2.

3.2.2. Stage 2- Appropriate Assessment

In this stage, the impact of the project on the integrity of any Natura 2000 site within the Natura 2000 network is considered with respect to the Conservation Objectives (COs) of the site and to its structure and function. Mitigation measures should be applied to the point where no adverse impacts on the site(s) remain. The output from Stage 2 is also known as an NIS. If it is not possible to reduce the impacts to an acceptable or non-significant level through the use of avoidance and or mitigation, Stage 3 of the process must be undertaken.

3.2.3. Stage 3 – Alternative Solutions

Should the AA (Stage 2) determine that adverse impacts are likely upon a Natura 2000 site, this stage examines alternative ways of implementing the project that, where possible, avoid these adverse impacts. If there are alternative solutions that exist that can be implemented that do not have negative impacts on European sites, they should be adopted regardless of cost. This alternative proposal then reverts to Stage 2 to be re-assessed. Once it has been determined that all reasonable alternatives have been assessed and considered the AA will then progress to Stage 4. For the avoidance of doubt, no reliance is placed on Stage 3 here.

3.2.4. Stage 4 – IROPI

Assessment where no alternative solutions exist and where adverse impacts remain but where Imperative Reasons of Overriding Public Interest (IROPI) exist, an assessment to consider whether compensatory measures will or will not effectively offset the damage to any Natura 2000 site will be necessary. It is the characteristics of the project or plan that will determine whether or not the Competent Authority can allow it to progress. European case law highlights that consideration must be given to alternatives outside the project area in carrying out the IROPI test. It is a rigorous test which projects are generally considered unlikely to pass. In any event, the developer does not purport to place any reliance on Stage 4.

3.3. Relevant Guidance and Sources of Information

EU and national guidance exist in relation to Member States' fulfilling their requirements under the EU Habitats Directive, with particular reference to Article 6(3) and 6(4) of that Directive. The methodology followed in relation to this screening for AA has had regard to the following guidance:

- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government (DEHLG, 2010);
- Communication from the Commission on the Precautionary Principle (EC, 2000);
- Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (known as MN2000), Office for Official Publications of the European Communities, Luxembourg (EC, 2018);
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Brussels (EC, 2001);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the Commission (EC, 2007a);
- Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC. European Commission. (EC, 2021a);
- Nature and biodiversity cases: Ruling of the European Court of Justice (EC, 2006);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013);

- Article 6 of the Habitats Directive: Rulings of the European Court of Justice (Sundseth and Roth, 2014);
- The Planning and Development Act 2000-2021 (including Part XAB of the Planning and Development Act 2000);
- The Planning and Development Regulations 2001-2021;
- Birds Directive (Council Directive 2009/147/EC);
- European Communities (Birds and Natural Habitats) Regulations 2011 (as amended);
- NPWS Guidance for Planning Authorities (DEHLG, 2010);
- National Biodiversity Action Plan 2023-2030 (DoCHG, 2024);
- Cork County Development Plan 2022-2028 (Cork County Council, 2022);
- Waterford County Development Plan 2022-2028 (Waterford County Council, 2022);
- Youghal Biodiversity Action Plan 2022-2027 (Wild Work, 2020);
- Climate Action Plan 2025 – Securing our Future (Government of Ireland); and
- Practice Note PN01: Appropriate Assessment Screening for Development Management. (OPR, 2021).

In addition, ecological documents (including Environmental Impact Assessment Report (EIAR) Biodiversity and Ornithology chapters, other AA/NIS reports and relevant supporting documents) for similar projects in the vicinity of the Proposed Development have also been consulted to consider for relevant source pathway interactions contributing to in-combination effects on identified receptors.

3.4. Identification of European Sites

The identification of relevant European sites to be included in this report was based on the identification of the ZoI of the Proposed Development, a S-P-R model of effects, and the likely significance of any identified effects.

3.4.1. Source-Pathway-Receptor Model

Current guidance informing the approach to screening for AA defines the ZoI of a Proposed Development as the geographical area over which it could affect the receiving environment in a way that could have significant effects on the QIs of a European site. It is recommended that this is established on a case-by-case basis using the Source-Pathway-Receptor (S-P-R) model.

The likely effects of the Proposed Development on European sites have been appraised using the S-P-R model, where:

- A 'Source' is defined as the individual element of the Proposed Development that has the potential to impact on a European site, its qualifying features and its Conservation Objective (CO)s;
- A 'Pathway' is defined as the means or route by which a source can affect the ecological receptor; and
- A 'Receptor' is defined as the Special Conservation Interest's (SCIs) of an SPA or Qualifying interests (QIs) of a SAC for which COs have been set for the European sites being screened.

An S-P-R model is a standard tool used in environmental assessment. For an effect to be likely, all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism results in no likelihood for the effect to occur (OPR, 2021). The S-P-R model was used to identify a list of European sites, and their QIs/SCIs, with potential links to European sites. These are termed 'relevant' European sites/QIs/SCIs throughout this report.

An effect can be described as a direct effect (such as the loss of a QI habitat or the mortality to a QI/SCI species) or an indirect effect (such as degradation to a habitat from (for example) water pollution).

The relevant European sites were identified based on the following:

- Identification of potential sources of effects based on the Proposed Development description and details, including changes to potentially suitable ex-situ habitats at the site (i.e. habitats utilised by SCI bird species outside of their designated SPAs);
- Use of up-to-date GIS spatial datasets for European designated sites and water catchments – downloaded from the NPWS website (www.npws.ie) and the Environmental Protection Agency (EPA) website (www.epa.ie) to identify European sites which could potentially be affected by the Proposed Development; and
- Identification of potential pathways between the Proposed Development and any European sites within the ZoI of any of the identified sources of effects.
 - The catchment data were used to establish or discount potential hydrological connectivity between the Proposed Development and any European sites;

- Groundwater and bedrock information used to establish or discount potential hydrogeological connectivity between the Proposed Development and any European sites;
- Air and land connectivity assessed based on Proposed Development details and proximity to European sites; and
- Consideration of potential indirect pathways, e.g. impacts to flight paths, ex-situ (effects outside the designated site but relevant to its QIs/SCIs and COs) habitats, etc.

3.4.2. Zone of Influence

The proximity of the Proposed Development to European sites, and more importantly QIs/SCIs of European sites, is of importance when identifying potential LSEs. During the initial scoping of this report, a suitable ZOI based on potential receptors was applied for impact assessment.

A conservative approach has been used, which minimises the risk of overlooking distant or obscure effect pathways, while also avoiding reliance on buffer zones within which all European sites should be considered. This approach assesses the complete list of all QIs/SCIs of European sites in Ireland (i.e. potential receptors), instead of listing European sites within buffer zones. This follows European Commission guidance.

In particular, it should identify:

- *“Any Natura 2000 sites geographically overlapping with any of the actions or aspects of the plan or project in any of its phases, or adjacent to them;*
- *Any Natura 2000 sites within the likely zone of influence of the plan or project. Natura 2000 sites located in the surroundings of the plan or project (or at some distance) that could still be indirectly affected by aspects of the project, including as regards the use of natural resources (e.g. water) and various types of waste, discharge or emissions of substances or energy;*
- *Natura 2000 sites in the surroundings of the plan or project (or at some distance) which host fauna that can move to the project area and then suffer mortality or other impacts (e.g. loss of feeding areas, reduction of home range);*
- *Natura 2000 sites whose connectivity or ecological continuity can be affected by the plan or project” (EC, 2021b, p.10).*

Following the guidance set out by the National Roads Authority (NRA, 2009), the Proposed Development has been evaluated based on an identified ZOI with regard to the potential impact pathways to ecological features both static and mobile. The ZOI of the Proposed Development on mobile species (e.g. birds, mammals, and fish), and static species and habitats (e.g. saltmarshes, woodlands, and flora) is considered differently depending on the location. Mobile species have ‘ranges’ outside of the European site in which they are QI/SCI. The ranges of mobile QI/SCI species vary considerably, from several metres (e.g. in the case of whorl snails *Vertigo* spp.), to hundreds of kilometres (in the case of migratory wetland birds).

Whilst static species and habitats are generally considered to have ZOIs within close proximity of the Proposed Development, they can be significantly affected at considerable distances from an effect source; for example, where an aquatic QI habitat or plant is located many kilometres downstream

from a pollution source. Bird species disturbance distances were considered based on the most recent available evidence for wintering and breeding periods (SNH, 2016; Goodship and Furness, 2022).

Hydrological linkages between the Proposed Development and European sites (and their QIs/SCIs) can occur over significant distances; however, any effect will be site specific depending on the receiving water environment and nature of the potential impact. A reasonable worst-case Zol for water pollution from the Proposed Development are considered to be the surface water continuous pathway between Proposed Development and the first Water Framework Directive (WFD) coastal water body (**Section 4.1.3**). One transitional waterbody separates the Proposed Development from the first Coastal waterbody (**Section 4.1.3**).

3.4.3. Likely Significant Effect

The threshold for a Likely Significant Effect (LSE) is treated in the screening exercise as being above a *de minimis* level¹. The opinion of the Advocate General in CJEU case C-258/11 outlines:

“The requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill”.

In this report, therefore, ‘relevant’ European sites are those within the potential Zol of activities associated with the Proposed Development, where LSE pathways to European sites were identified through the S-P-R model.

The COs of the European sites identified to lie within the Zol were reviewed and assessed to establish whether the construction, operation, and decommissioning of the Proposed Development have the potential to have a negative impact on any of the QIs and/or COs listed for the site.

The assessment framework is taken from the best practice guidelines issued by the EC, i.e. “Assessment of plans and projects significantly affecting Natura 2000 sites – Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC”.

The potential for significant effects that may arise from the Proposed Development was considered using key indicators:

- Habitat loss or alteration;
- Habitat/species fragmentation;
- Degradation of Habitat;
- Disturbance and/or displacement of species;
- Changes in population density; and
- Changes in water quality and resources.

¹ *Sweetman v. An Bord Pleanála (Court of Justice of the EU, case C-285/11). A de minimis effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European site necessary to ensure their favourable conservation condition. If low level effects on habitats or individuals of species are judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.*

In addition, information pertaining to the COs of the European sites, the ecology of the designated habitats and species and known or perceived sensitivities of the habitats and species were considered.

3.4.4. In Combination Effects

Article 6(3) of the Habitats Directive requires that the project is considered in-combination with the effects with other plans and projects. As set out in EC (2018), significance will vary depending on factors such as: extent, intensity, magnitude of impact, probability, type, duration, timing, cumulative effects, and the vulnerability of the habitats and or species concerned.

Plans and projects that have been approved in the past five years should be included in the in-combination provision. For other proposed plans or projects, it would seem appropriate to restrict the 'in-combination' provision to plans that have been proposed, (i.e. for which an application for approval or consent has been submitted) (EC, 2021b).

Impacts arising from the Proposed Development that overlap with those from other projects, plans and activities which could result in adverse effects are to be considered. This means that an overlap of the physical extents of the impacts arising from the two (or more) projects, plans or activities must be established for an in-combination effect to arise. For example, for a cumulative sedimentation effect to be established, it must be determined that the extent of sediment release from both projects has the potential to overlap (temporally and/or spatially) and may affect a receptor (habitat or species) at the same location.

Exceptions to this exist for certain mobile receptors that may move between, and be subject to, two or more separate physical extents of impact from two or more projects. Where relevant, mitigation is proposed as necessary to prevent adverse in-combination effects.

3.5. Ecological Data

3.5.1. Desk Study

A desk study was completed to assess the potential for all QIs and SCIs of European sites to occur, given their ecological requirements identified by Balmer *et al.* (2013) for SCIs, and the NPWS for QIs (NPWS, 2019a, 2019b, 2019c). SCI Birds and mobile QI species can travel many kilometres from their core areas, and desktop surveys assessed the potential presence of such species beyond the European sites for which they are QIs/SCIs. Desktop studies had particular regard for the following sources:

- Tabulated lists for all European sites in Ireland of SCIs and QIs, obtained through NPWS datasets²;
- Information on ranges of mobile QI populations in Volume 1 of NPWS' Status of EU Protected Habitats and Species in Ireland (NPWS, 2019a, 2019b, 2019c), and associated digital shapefiles obtained from the NPWS Research Branch;
- Information on ranges of mobile SCIs bird populations from Bird Atlas 2007–11 (Balmer *et al.*, 2013); excluding birds of prey whose ranges were determined with reference to Hardey *et al.* (2013);

² Available at <https://www.npws.ie/protected-sites> Accessed in December 2025

- A search was undertaken on the National Biodiversity Data Centre (NBDC)² for Protected and Invasive Species presence in the vicinity of the Proposed Development of relevance to European sites as potential mobile QIs or SCIs. The areas subject to the proposed activities are located within the **X08** Irish Grid Square (10km x 10km) and the relevant species records available for this location are shown in **Table 4.1** (records exceeding 50 years were excluded from the table). Species considered relevant are Annex II species, Annex I birds, and SCI bird species of SPAs within the relevant Zol.

Methodologies for the surveys are provided in detail below. **Table 3.1** provides a brief summary list of the surveys conducted for each target group, the relevant guidance followed, and the months and years the surveys were undertaken in line with CIEEM (2024). For full details of survey, field survey methodology and efforts, see **Sections 3.5.2.1 to 3.5.2.5**.

Surveys	Target Species	Methodology Guidance	Date
Terrestrial Habitat			
Walkover	General Flora, Habitat Features	Fossitt (2000); Smith <i>et al.</i> (2011); Perrin <i>et al.</i> (2014)	27 th January, 28 th February, 20 th March, 2 nd May and 19 th August 2025
Invasive Species	Invasive Alien Plant Species	Smith <i>et al.</i> (2011); Perrin <i>et al.</i> (2014)	19 th March and 20 th August 2025

⁷ Available at <https://www.npws.ie/maps-and-data/habitat-and-species-data> Accessed in December 2025

Surveys	Target Species	Methodology Guidance	Date
Birds			
Water Connectivity Surveys	General waterbirds	SNH (2017)	27 th January, 4 th and 11 th February, 11 th March, 15 th May and 6 th June 2025
I-WeBS	Wintering Waterbirds	SNH (2017); Goodship & Furness (2022); BirdWatch Ireland (2008)	27 th January, 4 th and 11 th February, 11 th March, 15 th May and 6 th June 2025
Field Assessment surveys	Barn Owl <i>Tyto alba</i> , Kingfisher <i>Alcedo atthis</i> , Dipper <i>Cinclus cinclus</i> , Grey Wagtail <i>Motacilla cinerea</i>	TII (2017); Cummins <i>et al.</i> (2010); Crowe <i>et al.</i> (2008)	27 th January, 4 th , 11 th and 28 th February, and 12 th , 27 th and 28 th March
Mammals			
Field Assessments Surveys and Mammal Walkover surveys	General Mammals	NRA (2005, 2006, 2008)	Field Assessments: 27 th January 4 th , 11 th and 28 th February, and 12 th , 27 th and 28 th March Mammal Walkovers: 19 th and 21 st August 2025
Otter <i>Lutra lutra</i> Watercourse Crossing surveys	Otter	NRA (2006, 2008); Reid <i>et al.</i> (2013); Highways Agency (1999)	19 th and 21 st August 2025

3.5.2.1. Habitat Walkover Survey

The study area was selected based on professional judgement and as per best practice (CIEEM 2024) and all habitats within the likely immediate Zol of this study area were surveyed and mapped according to best practice methods (Fossitt, 2000; Smith *et al.*, 2011; Perrin *et al.*, 2014). All habitats within 50m of the red line boundary of the Proposed Development were surveyed and classified to level 3 (Fossitt, 2000) (**Figure 3.2**).

Aerial photography assisted habitat delineation and interpretation, and plant identification and nomenclature followed Parnell and Curtis (2012) and Stace (2010). The predominant plant species for each habitat type were recorded to accurately determine habitats present within the study area. These surveys also included the search for any Invasive Alien Plant Species (IAPS) listed under the Third Schedule of the European Communities Regulations 2011 (S.I. 477 of 2015, as amended) and the first schedule of the European Union (Invasive Alien Species) Regulations 2024 (S.I. 347). The surveys were carried out in good weather with no constraints.

During habitat surveys, particular attention was paid to searching suitable habitat for rare or protected flora species, to determine whether they were present within, or close to, the Proposed Development red line boundary. Habitat walkovers were undertaken within the study area on the 27th January, 28th February, 20th March, 2nd May, and 19th August 2025 (**Table 3.2**).

3.5.2.2. Otter Survey

Searches for Otter *Lutra lutra* were conducted alongside general mammal walkovers and field assessments which were used to determine the potential or likely presence of protected Annex II mammal species on the site (**Figure 3.3**). The walkover surveys involved habitat mapping, habitat evaluations, grading hedgerows, grading watercourses, and examinations of riparian habitats along watercourses. The surveyor conducting a mammal walkover survey made specific attention to search for the presence of Otter holts and couches, and potential habitat features for the full range of protected species that are likely to occur in the vicinity of the site (NRA, 2009).

The presence of Otters during a walkover survey can be confirmed through the searching of watercourses and adjacent riverbanks for spraints, holts, couches, pawprints and slides. Evidence of Otter (spraint, slides, holts, feeding [cracked shells, fish bones]) were searched for along waterbodies adjacent to the Proposed Development as part of these surveys following NRA (2006) guidance '*Guidelines for the Treatment of Otters Prior to the Construction of National Road Schemes*' and NRA (2008) guidance '*Guidelines for the Crossing of Watercourses During the Construction of National Road Schemes*'. The goal of the surveys was to identify presence within the 50m of the Proposed Developments works and 150m upstream and downstream along the banks of any grid crossings (Highways Agency, 1999).

Otter surveys were completed in summer when vegetation cover varied from sparse to dense (NRA, 2009). As part of this survey effort, general mammal walkover surveys were completed on the 19th and 21st August 2025, however, signs of Otter were also surveyed alongside field assessments on the 27th January 4th, 11th and 28th February, and 12th, 27th and 28th March where vegetation levels were at their lowest (**Table 3.3**).

3.5.2.3. Bats

Preliminary Roost Assessments (PRAs) and emergence surveys were conducted onsite, however, as no relevant European sites list any bats as QIs within their relevant Zols, and no evidence to support the presence of Lesser Horseshoe Bat onsite, the methodology and results for these surveys have not been included in this report.

3.5.2.4. Wintering Wetland Birds

Wintering wetland birds include wildfowl (ducks, geese, and swans), waders and other species typically associated with wetland habitats, such as herons, grebes, crakes, rails, and gulls. Wetland birds were surveyed in winter following the standardised approach used for the Irish Wetland Bird Survey (I-WeBS). The I-WeBS methodology is detailed in the I-WeBS Counters Manual (BirdWatch Ireland, 2008) and these methods represent the recommended approach in the Nature Scot guidance documents (SNH, 2017).

Monthly I-WeBS took place in winter season 2024/2025 and the breeding migratory period. Surveys included observing from a vantage point over all habitats likely to be used by wintering wetland birds (including flooded fields). Surveyors used binoculars and telescopes to record the count number, locations, and time of sightings of species. Suitable wetland bird habitats within or adjacent to the Proposed Development were included in the field study area and survey locations are provided in

Figure 3.4. All wildfowl were recorded (if present) as target species during I-WeBS surveys. Details of survey efforts and dates are provided in **Table 3.4**. Results are provided in **Section 4.2.4.1**.

A total of six site visits were undertaken (27th January, 4th and 11th February and 11th March, 15th May and 6th June 2025).

3.5.2.5. Water Connectivity Surveys

Water connectivity surveys were undertaken using the SNH VP methodology (SNH, 2017). One VP was selected following viewshed analysis and available guidance (SNH, 2017) to provide ground level coverage of all lands under consideration for solar array installation and associated infrastructure (**Figure 3.5**). The availability of suitable weather conditions for completing surveys (i.e. with good visibility and little wind or rain) was considered within survey scheduling to ensure the avian flight data presented herein were all collected in optimal weather conditions (as required by best practice guidance).

Waterbirds were the primary target species for this survey to determine usage of the site by species associated with the Blackwater Estuary SPA, these included gulls, wader species, and any species of conservation concern.

Total counts of each species recorded in each season were tallied to inform the key receptors present within the study area. Details recorded included flightlines, which were digitised using QGIS software (QField), flight durations, flight direction, and flight heights.

A combined total of 12 hours of VP surveys were completed during the survey period (**Table 3.5**).

A total of six site visits were conducted for water connectivity surveys (27th January, 4th and 11th February, 11th March, 15th May and 6th June 2025).

The dates, surveyors and weather during survey efforts over the monitoring period can be seen in **Table 3.6**. Surveys were distributed evenly across daylight hours and conditions, in line with SNH (2017) guidance.

Table 3.2: Habitat Walkover Survey Efforts.

Survey	Observer	Date	Start Time	End Time	Duration of survey (s)
Habitat Walkover	DP	27/01/2025	11:45	15:15	12,600
Field Assessment	DP	04/02/2025	11:45	15:45	14,400
Field Assessment	DP	11/02/2025	11:00	15:30	16,200
Habitat Walkover	DP	28/02/2025	09:15	14:15	18,000
Field Assessment	DP	12/03/2025	10:20	13:20	10,800
Habitat/Invasive species Walkover	DP	20/03/2025	11:15	17:15	21,600
Field Assessment	DP	27/03/2025	09:15	14:15	18,000
Field Assessment	DP	28/03/2025	09:15	14:15	18,000
Habitat Walkover	DP	02/05/2025	09:00	14:00	18,000
Habitat/Invasive species Walkover	DP	19/08/2025	11:15	14:45	12,600

Table 3.3: General Mammal walkover survey efforts and weather 2025.

Survey	Observer	Date	Start time	End time	Duration of survey (s)
Field Assessment	DP	27/01/2025	11:45	15:15	12,600
Field Assessment	DP	04/02/2025	11:45	15:45	14,400
Field Assessment	DP	11/02/2025	11:00	15:30	16,200
Field Assessment	DP	28/02/2025	09:15	14:15	18,000
Field Assessment	DP	12/03/2025	10:20	13:20	10,800
Field Assessment	DP	27/03/2025	09:15	14:15	18,000
Field Assessment	DP	28/03/2025	09:15	14:15	18,000
Mammal Walkover	DP	19/08/2025	11:15	14:45	12,600
Mammal Walkover	DP	21/08/2025	11:15	14:45	12,600

Table 3.4: I-WeBS Survey Efforts.

Date	Observer	Rain	Cloud	Visibility (km)	Wind Speed (Beaufort Scale)	Wind Direction	Temp	Start Time	End Time	Duration of Survey (s)
27/01/2025	DP	Moderate rain	8/8	3	F4	SE	7	10:30	11:30	3,600
04/02/2025	DP	None	6/8	20	F4	SW	8	10:15	11:15	3,600
11/02/2025	DP	None	7/8	20	F3	E	4	09:10	10:40	5,400
11/03/2025	CMCK	None	7/8	5	F3	NE	9	13:20	15:20	7,200
15/05/2025	DP	None	3/8	20	F3	SE	16	08:00	09:30	5,400
06/06/2025	DP	None	8/8	20	F2	SW	10	07:40	08:40	3,600

Table 3.5: Winter VP hours surveyed at the Proposed Development.

VP	Jan	Feb	Mar	May	Jun	Total
1	2	4	2	2	2	12

Table 3.6: Winter Season 2024/2025 Survey Efforts.

VP Name	Date	Observer	Rain	Cloud	Visibility (km)	Wind Speed	Wind Direction	Temp.	Start Time	End Time	Duration of survey (s)
VP1	27/01/2025	DP	None	8/8	5	F4	SE	8	15:25	17:25	7,200
VP1	04/02/2025	DP	None	6/8	20	F2	S	7	07:55	09:55	7,200
VP1	11/02/2025	DP	None	8/8	10	F3	E	4	16:00	18:00	7,200
VP1	11/03/2025	CMCK	None	6/8	10	F1	NE	10	16:28	18:28	7,200
VP1	15/05/2025	DP	None	4/8	20	F2	SE	14	17:35	19:35	7,200
VP1	06/06/2025	DP	None	6/8	20	F3	SW	14	13:25	15:25	7,200

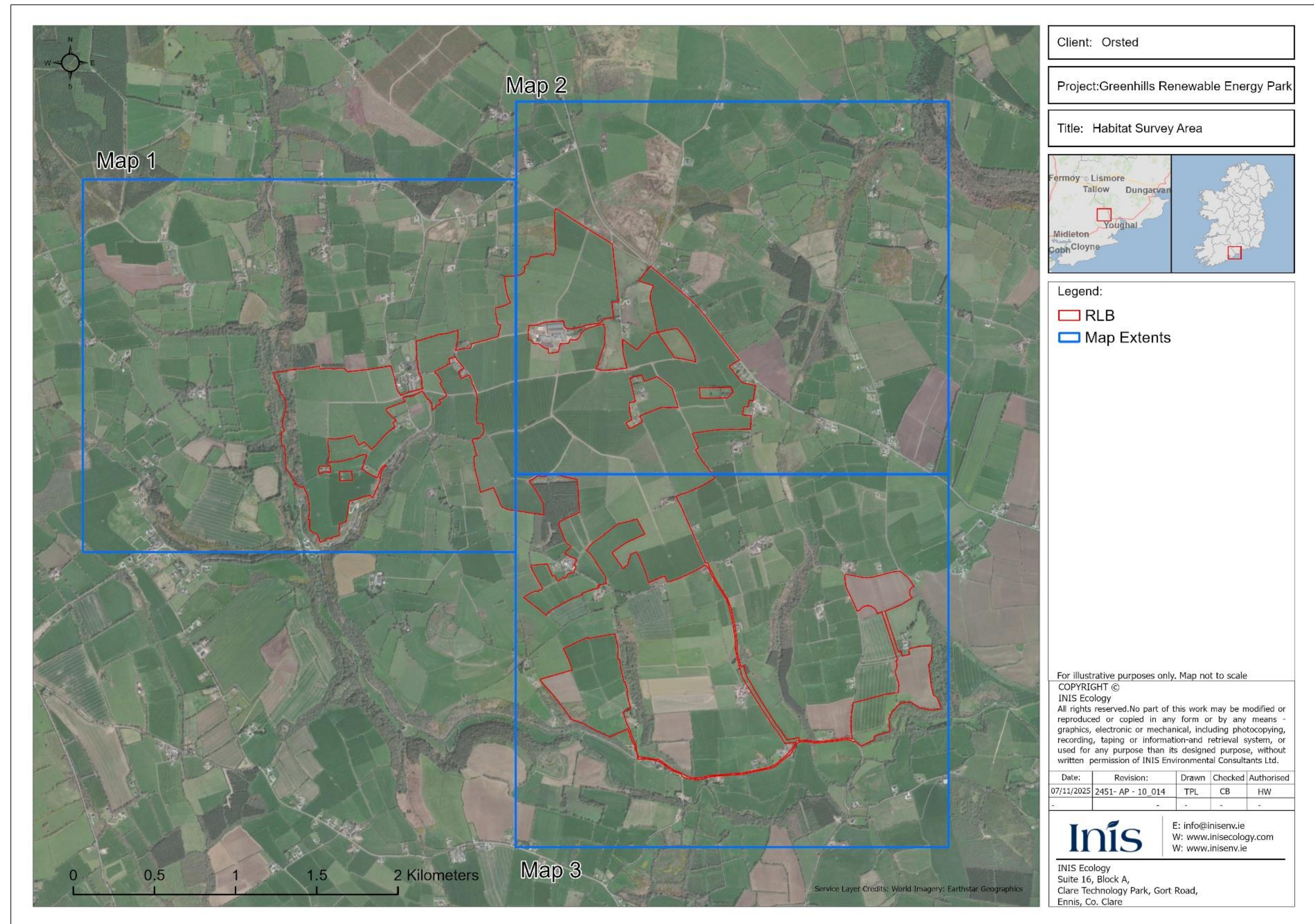


Figure 3.2: Habitats Walkover Survey Area.

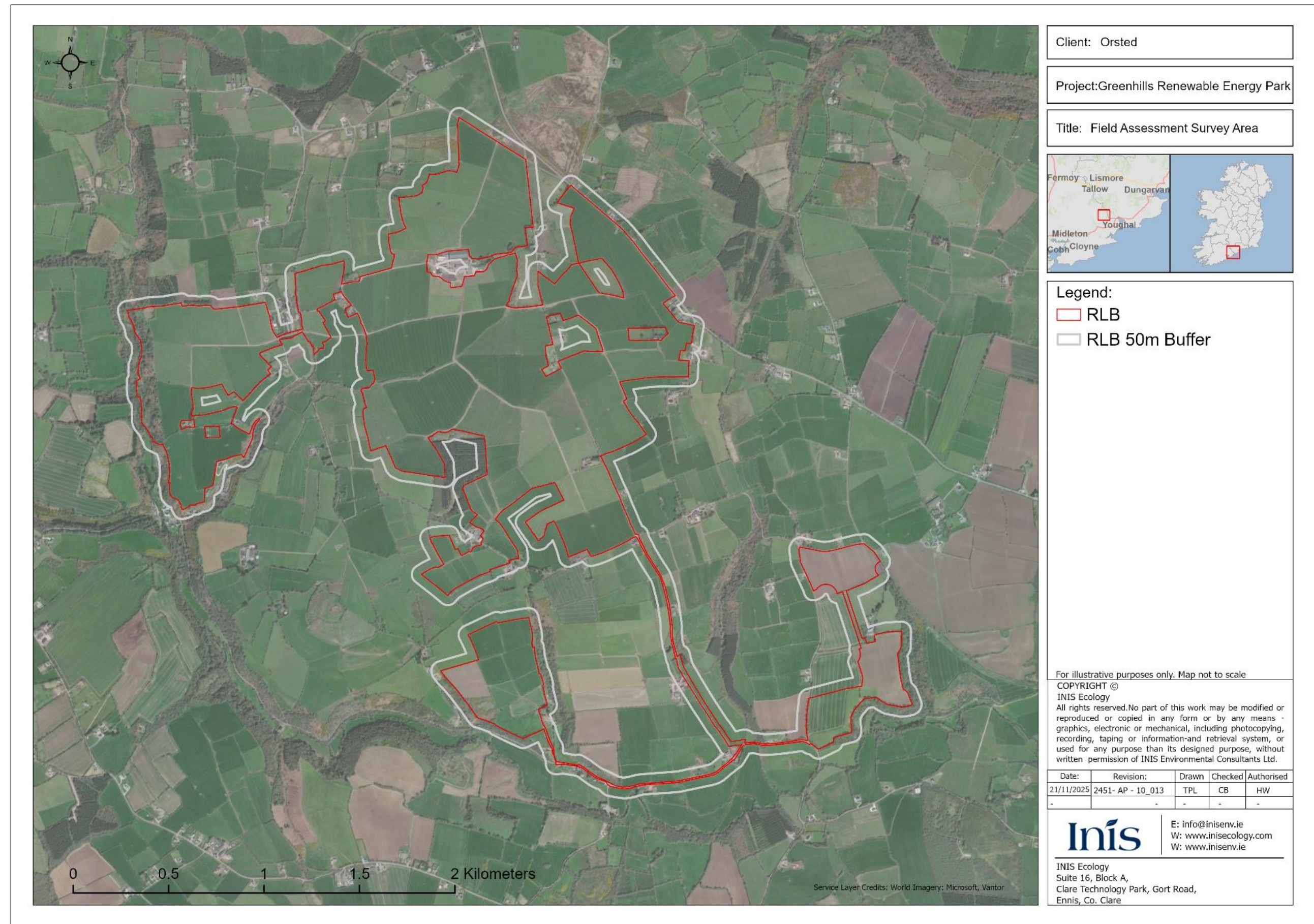


Figure 3.3: Field Assessment Survey Area.

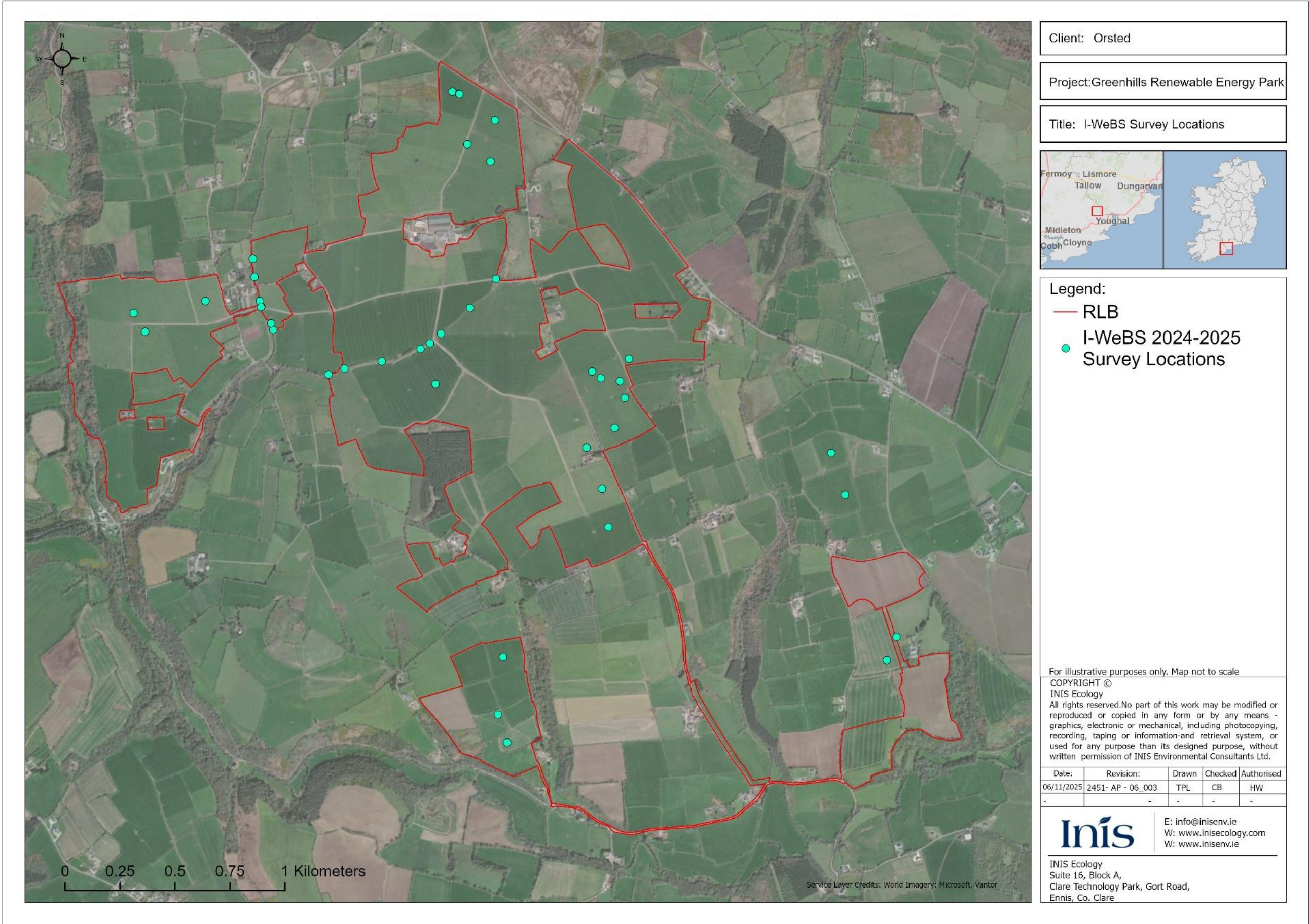


Figure 3.4: I-WeBS.

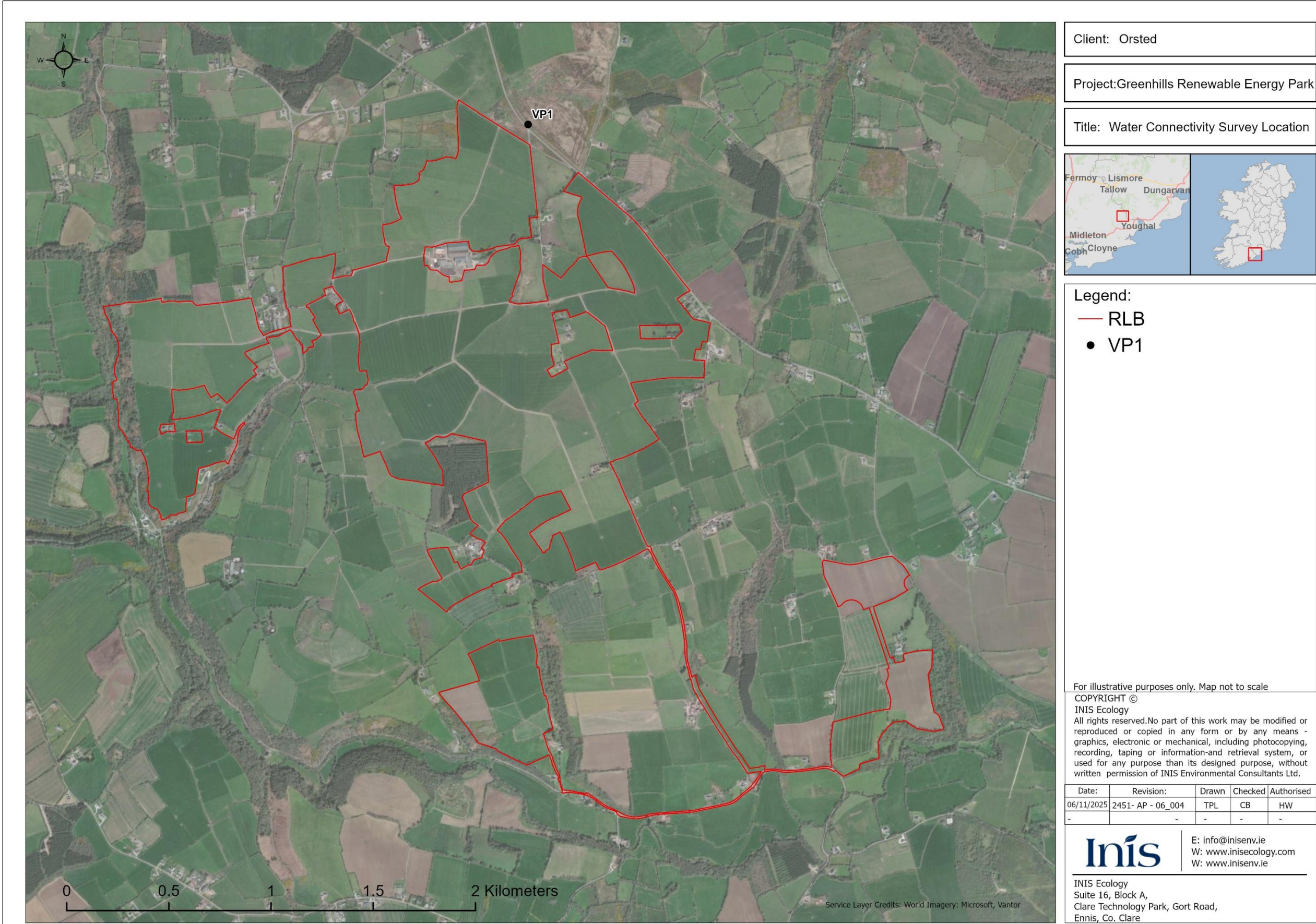


Figure 3.5: Water Connectivity VP Location.

4. RECEIVING ENVIRONMENT

4.1. Desk study

4.1.1. Protected and Invasive Species

One protected plant species was recorded within the X08 OS grid square (NBDC, 2025); Killarney Fern *Trichomanes speciosum* (Protected Flora Order, 2022). A total of 13 records of Killarney Fern were recorded and, as such, there is potential that they could be within the receiving environment of the Proposed Development (**Table 4.1**).

The following mammals classified as 'High Impact invasive species' (EU Regulation No. 1143/2014 Regulation S.I. 477 (Ireland)) were reported by the NBDC records in the X08 10km grid square: American Mink *Mustela vison*, Grey Squirrel *Sciurus carolinensis* and Fallow Deer *Dama dama*. The following invasive alien plant species (IAPS) classified as 'High Impact invasive species' were also recorded: Common Cord-grass *Spartina anglica*, Himalayan Basam *Impatiens glandulifera*, Japanese Knotweed *Fallopia japonica*, and Rhododendron *Rhododendron ponticum* and two 'Medium Impact invasive species' were recorded: Himalayan Knotweed *Persicaria wallichii* and Three-cornered Garlic *Allium triquetrum* (**Table 4.1**).

Table 4.1: Records of relevant species of Flora and Fauna.

Common name	Scientific name	Record Count	Date of record	Designation
Invertebrates				
Marsh Fritillary	<i>Euphydryas aurinia</i>	1	31/12/1975	EU Habitats Directive Annex II, Wildlife Acts
Birds				
Bar-tailed Godwit	<i>Limosa lapponica</i>	5	30/10/2018	Wildlife Acts, EU Birds Directive Annex I, BoCCI - Amber List
Black-headed Gull	<i>Chroicocephalus ridibundus</i>	40	28/01/2023	Wildlife Acts, BoCCI - Red List
Black-tailed Godwit	<i>Limosa limosa</i>	28	18/03/2023	Wildlife Acts, BoCCI - Amber List
Common Gull	<i>Larus canus</i>	12	26/01/2020	Wildlife Acts, BoCCI - Amber List
Curlew	<i>Numenius arquata</i>	53	18/03/2023	Wildlife Acts, EU Birds Directive Annex II, BoCCI - Red List
Dunlin	<i>Calidris alpina</i>	6	28/01/2023	Wildlife Acts, EU Birds Directive Annex I, BoCCI - Amber List
Golden Plover	<i>Pluvialis apricaria</i>	8	28/01/2023	Wildlife Acts, EU Birds Directive Annex I; Annex II; Annex III, BoCCI - Red List
Grey Plover	<i>Pluvialis squatarola</i>	3	31/12/2011	Wildlife Acts, BoCCI - Amber List

Common name	Scientific name	Record Count	Date of record	Designation
Lapwing	<i>Vanellus vanellus</i>	10	20/01/2023	Wildlife Acts, EU Birds Directive Annex II, BoCCI - Red List
Redshank	<i>Tringa totanus</i>	31	18/03/2023	Wildlife Acts, BoCCI - Red List
Ringed Plover	<i>Charadrius hiaticula</i>	1	29/02/1984	Wildlife Acts, BoCCI - Amber List
Teal	<i>Anas crecca</i>	1	28/01/2023	Wildlife Acts, EU Birds Directive Annex II; Annex III, BoCCI - Amber List
Wigeon	<i>Mareca penelope</i>	11	28/01/2023	Wildlife Acts, EU Birds Directive Annex II; Annex III, BoCCI - Amber List
Terrestrial Mammals				
Otter	<i>Lutra lutra</i>	51	02/05/2017	EU Habitats Directive Annex II; Annex IV, Wildlife Acts
Harbour Seal	<i>Phoca vitulina</i>	3	15/05/2019	EU Habitats Directive Annex II; Annex IV, Wildlife Acts
Protected Flora				
Killarney Fern	<i>Trichomanes speciosum</i>	13	20/06/2005	EU Habitats Directive Annex II; Annex IV, Flora Protection Order
Invasive Alien Plant Species				
Common Cord-grass	<i>Spartina anglica</i>	7	23/08/2012	High Risk Invasive: Regulation S.I. 477/2011, Regulation S.I. 374/2024
Himalayan Balsam	<i>Impatiens glandulifera</i>	4	29/07/2022	High Risk Invasive: EU Invasive Alien Species Regulation No. 1143/2014, Regulation S.I. 477/2011, Regulation S.I. 374/2024
Himalayan Knotweed	<i>Persicaria wallichii</i>	4	24/05/2009	Medium Risk Invasive: EU Invasive Alien Species Regulation No. 1143/2014, Regulation S.I. 477/2011, Regulation S.I. 374/2024
Japanese Knotweed	<i>Fallopia japonica</i>	22	14/05/2023	High Risk Invasive: EU Invasive Alien Species Regulation No. 1143/2014, Regulation S.I. 477/2011, Regulation S.I. 374/2024
Rhododendron	<i>Rhododendron ponticum</i>	30	08/05/2024	High Risk Invasive: Regulation S.I. 477/2011, Regulation S.I. 374/2024

Common name	Scientific name	Record Count	Date of record	Designation
Three-cornered Garlic	<i>Allium triquetrum</i>	6	20/05/2016	Medium Risk Invasive: Regulation S.I. 477/2011, Regulation S.I. 374/2024
Invasive Alien Species				
American Mink	<i>Neovison vison</i>	8	24/06/2015	High Risk Invasive: EU Invasive Alien Species Regulation No. 1143/2014, Regulation S.I. 477/2011, Regulation S.I. 374/2024
Fallow Deer	<i>Dama dama</i>	30	24/10/2018	High Risk Invasive: Regulation S.I. 477/2011, Regulation S.I. 374/2024, Wildlife Acts
Grey Squirrel	<i>Sciurus carolinensis</i>	1	31/12/2012	High Risk Invasive: EU Invasive Alien Species Regulation No. 1143/2014, Regulation S.I. 477/2011, Regulation S.I. 374/2024

* Birds of Conservation Concern in Ireland 2020–2026 (Gilbert *et al.*, 2021).

4.1.2. Protected Habitats

The ‘*Status of EU Protected Habitat and Species*’ Map Viewer Tool⁴ was used to confirm that there was no presence of designated habitats within the Proposed Development boundary and surrounding environment.

There are seven Annex I habitats that are recorded to be within the shared grid square of the Proposed Development boundary; Mediterranean salt meadows [1410], salicornia mud [1310], old oak woodland [91A0], transition mires [7140], estuaries [1130], tidal mudflats and sand [1140], and Atlantic salt meadows [1330]. Two of these habitats have their known extents mapped within the X08 grid square that overlaps with the Proposed Developments’ works, Mediterranean salt meadows [1410] and salicornia mud [1310]. These habitats detailed distribution is not fully known along watercourses connected to the Proposed Development.

The nearest Annex I habitats are the tidal mudflats [1140], Mediterranean salt meadows [1410], and salicornia mud [1310] located within the estuaries [1130] habitat which forms part of the Blackwater River (Cork/Waterford) SAC, located 2.2km east of the Proposed Development site boundary. Old oak woodland [91A0] was recorded 507.6m south of the Proposed Development site boundary.

4.1.3. Aquatic Environment

A search of the EPA Unified GIS Application⁵ and the EPA Catchments⁸ database was conducted for water bodies intersected by the Proposed Development and their water quality for 2019-2024, and all water bodies located within the considered ZOI (Section 3.4.1).

⁸ Available at <https://www.catchments.ie/>. Accessed in December 2025

4.1.3.1. River Water Bodies

The Ballyneague stream (18B47) flows from the centre area of the site and is heavily modified as a dry drain in the existing ecological baseline. This stream flows into the Knocknagappagh River (18K42), continuing westerly through the western area of the Proposed Development. The Carriganass stream (18C30) flows south through the Proposed Development from the north before meeting the confluence with the Knocknagappagh river.

The three rivers flow south-westerly into the confluence with the Tourig River (18T03), which flows southerly and continues in an easterly direction south of the Proposed Development. The Youghalpark stream (18Y01) flows south through the Proposed Development cable crossing of the unnamed rural road. The Ballyglavin River (18B67) is located east of the south-east area of the site, flowing southerly joining with the Tourig river. These rivers are also part of the Tourig_020 sub-basin (IE_SW_18T030700), which continues toward the Lower Blackwater M Estuary/Youghal Harbour (IE_SW_020_0100) (See **Section 4.1.3.2**), which separately forms part of the Blackwater River (Cork/Waterford) SAC and Blackwater Estuary SPA. All of the river waterbodies have a WFD status of 'Good' (2019-2024) and are considered 'Not at risk' of failing to meet their WFD objectives.

4.1.3.2. Transitional Water Bodies

The Lower Blackwater M Estuary/Youghal Harbour is located downstream of the Proposed Development via the Tourig River (**Section 4.1.3.1**). This transitional waterbody has a WFD status of 'Moderate' (2016-2021) and is classified as 'At risk' of failing to meet its WFD objectives. It has an EPA Transitional Water Quality status of 'Intermediate' as of the 2018-2020 period. The estuary flows into the Youghal Bay (IE_SW_020_0000) (See **Section 4.1.3.3**).

4.1.3.3. Coastal Water Bodies

Youghal Bay is a coastal waterbody hydrologically connected to the Proposed Development, located 11.3km downstream of the Proposed Development. This waterbody has a WFD status of 'Moderate' (2019-2024) and is classified as 'At risk' of failing to meet its WFD objectives. It has an EPA Transitional Water Quality status of 'Intermediate' as of the 2018-2020 period.

4.1.4. Otter

The NBDC recorded 51 records of Otter within the X08 10km grid square (NBDC, 2025), the most recent record was recorded on 02/05/2017.

The NPWS '*Status of EU Protected Habitat and Species*' Map Viewer Tool⁴ showed Otter has records along the banks of the Tourig River, which flows into the Blackwater River (Cork/Waterford) SAC of which Otter is a QI.

4.1.5. Bats

No Lesser Horseshoe Bat was recorded during the desk study. The NBDC bat landscape suitability value for Lesser Horseshoe Bat within the study area was 'Negligible' (NBDC, 2025).

4.1.6. European sites

The nearest European site to the Proposed Development is the Blackwater River (Cork/Waterford) SAC (002170) separated by a minimum distance of approximately 2.01km (**Table 4.2**). The preliminary Zol was chosen based on potential receptors of the Proposed Development to evaluate the potential for significant effects on European sites, alone and/or in-combination with other plans or projects. In total, the considered Zol of the Proposed Development intersects five European sites (**Table 4.2**; **Figure 4.1** and **4.2**). SPAs have been included for consideration where the COs of these sites list the species recorded during field surveys as SCIs. Lesser Black-backed Gull *Larus fuscus*, Herring Gull *Larus argentatus* and Black-headed Gull *Chroicocephalus ridibundus* were recorded during field surveys and have mean foraging ranges of 43.3km, 14.9km and 7km respectively (Power *et al.*, 2021).

Table 4.2: Distance from European sites within Zol and the Proposed Development.

Site code	Site name	Distance to Proposed Development (km)	Hydrological Distance (km)
Special Area of Conservation			
002170	Blackwater River (Cork/Waterford) SAC	2.01	3.50
000077	Ballymacoda (Clonpriest and Pillmore) SAC	6.26	-
002123	Ardmore Head SAC	14.38	-
Special Protection Area			
004028	Blackwater Estuary SPA	2.09	3.50
004023	Ballymacoda Bay SPA	6.28	-
004022	Ballycotton Bay SPA	13.08	-
004192	Helvick Head to Ballyquin SPA	15.80	-
004030	Cork Harbour SPA	16.04	-

Potential pathways between the Proposed Development and European sites are appraised in **Table 4.3**, including hydrological connectivity. The COs of the relevant European sites are also presented in **Table 4.3**. Two sites have hydrological connectivity to the Proposed Development (Blackwater River (Cork/Waterford) SAC and Blackwater Estuary SPA). These sites were scoped in for the impact assessment regarding the hydrological connectivity and the mobile QIs/SCIs travelling across the greater area and their potential interaction with the Proposed Development. Three additional sites (Ballymacoda Bay SPA, Ballycotton Bay SPA, Cork Harbour SPA) were identified to have connectivity based on SCIs for these sites being recorded during surveys (Power *et al.*, 2021).

The remaining relevant European sites located within the initial Zol search were determined not to have any potential pathway with the Proposed Development via hydrological pathways or via ex-situ species specific foraging ranges for QIs/SCIs.

Table 4.3: Relevant European sites, COs and connectivity to the Proposed Development (highlighted CO/European sites are identified with potential pathways for effects with the Proposed Development).

Designated site [code]	Conservation Objectives version	QIs[code]/SCIs [code]	Connectivity with the Proposed Development
Special Area of Conservation			
Blackwater River (Cork/Waterford) SAC [002170]	NPWS, 2012a	Estuaries [1130]	Yes, there is hydrological connectivity via the Youghal Park River which flows into the Tourig River, which has hydrological connectivity to the Blackwater River (Cork/Waterford) SAC located 3.5km downstream.
		Mudflats and sandflats not covered by seawater at low tide [1140]	
		Perennial vegetation of stony banks [1220]	
		<i>Salicornia</i> and other annuals colonising mud and sand [1310]	
		Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330]	
		Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	
		Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	
		Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	
		*Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0]	
		* <i>Taxus baccata</i> woods of the British Isles [91J0]	
		Freshwater Pearl Mussel <i>Margaritifera margaritifera</i> [1029]	

Designated site [code]	Conservation Objectives version	QIs[code]/SCIs [code]	Connectivity with the Proposed Development
		White-clawed Crayfish <i>Austropotamobius pallipes</i> [1092] Sea Lamprey <i>Petromyzon marinus</i> [1095] Brook Lamprey <i>Lampetra planeri</i> [1096] River Lamprey <i>Lampetra fluviatilis</i> [1099] Twaite Shad <i>Alosa fallax fallax</i> [1103] Salmon <i>Salmo salar</i> [1106] Otter <i>Lutra lutra</i> [1355] Killarney Fern <i>Trichomanes speciosum</i> [6985]	
Ballymacoda (Clonpriest and Pillmore) SAC [000077]	NPWS, 2015a	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] <i>Salicornia</i> and other annuals colonising mud and sand [1310] Atlantic salt meadows (Glauco- Puccinellietalia maritima) [1330]	No, does not have connectivity to the Proposed Development.
Ardmore Head SAC [002123]	NPWS, 2016a	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030]	No, does not have connectivity to the Proposed Development.
Ballymacoda Bay SPA [004023]	NPWS, 2015b	Teal <i>Anas crecca</i> [A052] Ringed Plover <i>Charadrius hiaticula</i> [A137]	Yes, the mean foraging ranges for Herring Gull and Black-headed Gull are considered to be 14.9km and 7km respectively (Power <i>et al.</i> , 2021). As such, there is potential for connectivity

Designated site [code]	Conservation Objectives version	QIs[code]/SCIs [code]	Connectivity with the Proposed Development
		Golden Plover <i>Pluvialis apricaria</i> [A140] Grey Plover <i>Pluvialis squatarola</i> [A141] Lapwing <i>Vanellus vanellus</i> [A142] Sanderling <i>Calidris alba</i> [A144] Dunlin <i>Calidris alpina</i> [A149] Black-tailed Godwit <i>Limosa limosa</i> [A156] Bar-tailed Godwit <i>Limosa lapponica</i> [A157] Curlew <i>Numenius arquata</i> [A160] Redshank <i>Tringa totanus</i> [A162] Turnstone <i>Arenaria interpres</i> [A169] Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179] Common Gull <i>Larus canus</i> [A182] Lesser Black-backed Gull <i>Larus fuscus</i> [A183] Wigeon <i>Mareca penelope</i> [A855] Wetland and Waterbirds [A999]	via mobile species pathways for these SCIs. However, the remaining SCIs were not recorded onsite during site surveys and thus are not considered further.
Blackwater Estuary SPA [004028]	NPWS, 2012b	Golden Plover <i>Pluvialis apricaria</i> [A140] Lapwing <i>Vanellus vanellus</i> [A142] Dunlin <i>Calidris alpina</i> [A149]	Yes, there is hydrological connectivity via the Youghal Park River which flows into the Tourig River, which has hydrological connectivity to the Blackwater Estuary SPA located 3.5km downstream.

Designated site [code]	Conservation Objectives version	QIs[code]/SCIs [code]	Connectivity with the Proposed Development
		Black-tailed Godwit <i>Limosa limosa</i> [A156]	
		Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	
		Curlew <i>Numenius arquata</i> [A160]	
		Redshank <i>Tringa totanus</i> [A162]	
		Wigeon <i>Mareca penelope</i> [A855]	
		Wetland and Waterbirds [A999]	
		Peregrine <i>Falco peregrinus</i> [A103]	
		Herring Gull <i>Larus argentatus</i> [A184]	
		Kittiwake <i>Rissa tridactyla</i> [A188]	
		Chough <i>Pyrrhocorax pyrrhocorax</i> [A346]	
Ballycotton Bay SPA [004022]	NPWS, 2014a	Teal <i>Anas crecca</i> [A052]	Yes, the mean foraging range for Lesser Black-backed Gull is considered to be 43.3km (Power <i>et al.</i> , 2021). As such, there is potential for connectivity via mobile species pathways for this SCI. However, the remaining SCIs were not recorded onsite during site surveys and thus are not considered further.
		Ringed Plover <i>Charadrius hiaticula</i> [A137]	
		Golden Plover <i>Pluvialis apricaria</i> [A140]	
		Grey Plover <i>Pluvialis squatarola</i> [A141]	
		Lapwing <i>Vanellus vanellus</i> [A142]	
		Black-tailed Godwit <i>Limosa limosa</i> [A156]	
		Bar-tailed Godwit <i>Limosa lapponica</i> [157]	
		Curlew <i>Numenius arquata</i> [A160]	

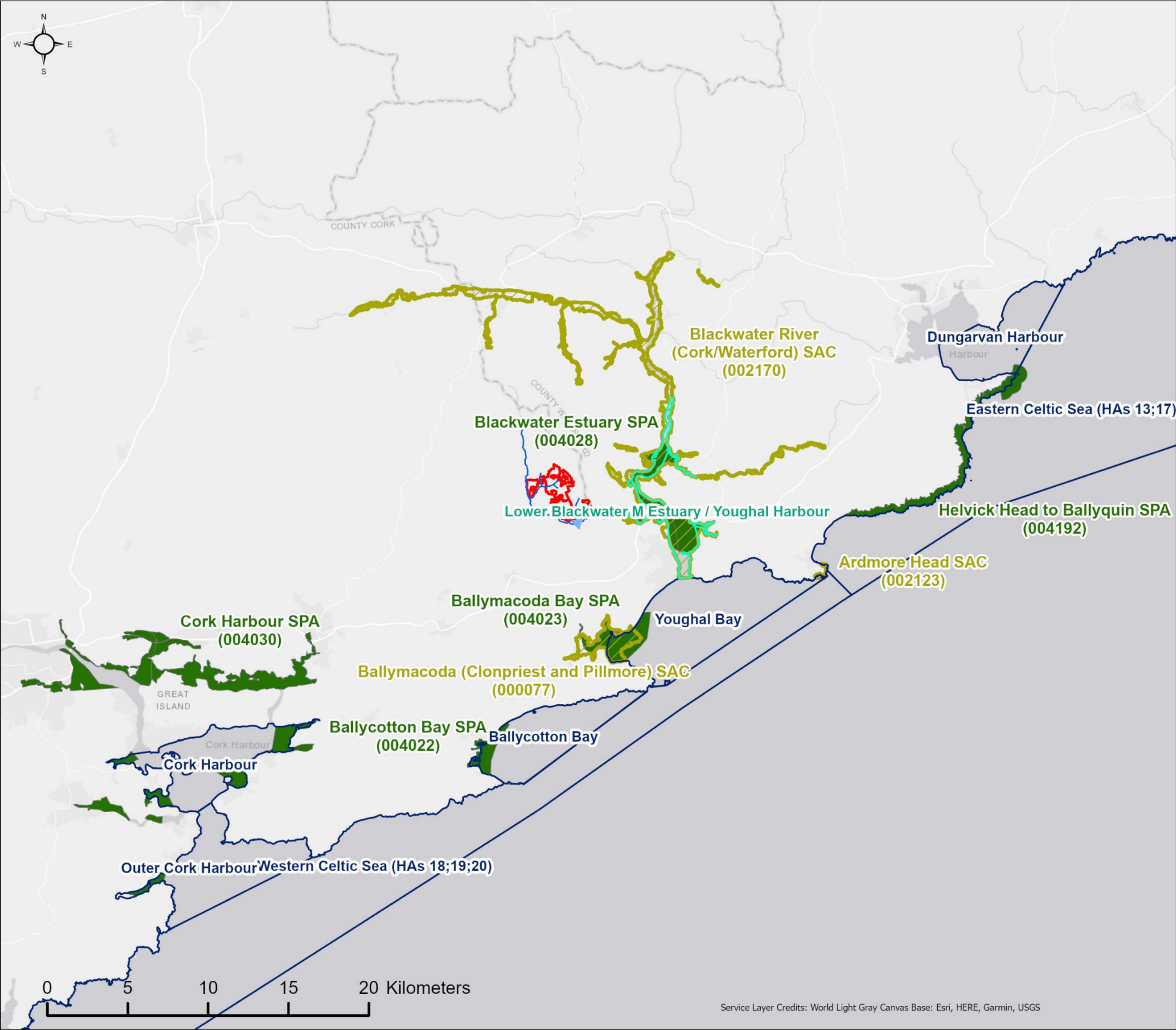
Designated site [code]	Conservation Objectives version	QIs[code]/SCIs [code]	Connectivity with the Proposed Development	
Helvick Head to Ballyquin SPA	NPWS, 2025	Turnstone <i>Arenaria interpres</i> [A169]		
		Common Gull <i>Larus canus</i> [A182]		
		Lesser Black-backed Gull <i>Larus fuscus</i> [A183]		
		Wetlands [A999]		
		Cormorant <i>Phalacrocorax carbo</i> [A017]	The mean foraging ranges for Herring Gull, the sole SCI recorded during field surveys is considered to be 14.9km (Power et al., 2021). As such, there is no likely potential for connectivity via mobile species pathways	
		Peregrine <i>Falco peregrinus</i> [A103]		
		Herring Gull <i>Larus argentatus</i> [A184]		
		Kittiwake <i>Rissa tridactyla</i> [A188]		
		Chough <i>Pyrrhocorax pyrrhocorax</i> [A346]		

Designated site [code]	Conservation Objectives version	QIs[code]/SCIs [code]	Connectivity with the Proposed Development
			for these SCIs given the separation distance of 15.8km at its nearest point. The remaining SCIs were not recorded onsite during site surveys and thus are not considered further.
Cork Harbour SPA [004030]	NPWS, 2014b	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	Yes, the mean foraging range for Lesser Black-backed Gull is considered to be 43.3km (Power <i>et al.</i> , 2021). As such, there is potential for connectivity via mobile species pathways for this SCI. However, the remaining SCIs were not recorded onsite during site surveys and thus are not considered further.
		Great Crested Grebe <i>Podiceps cristatus</i> [A005]	
		Cormorant <i>Phalacrocorax carbo</i> [A017]	
		Grey Heron <i>Ardea cinerea</i> [A028]	
		Shelduck <i>Tadorna tadorna</i> [A048]	
		Teal <i>Anas crecca</i> [A052]	

Designated site [code]	Conservation Objectives version	QIs[code]/SCIs [code]	Connectivity with the Proposed Development
		Pintail <i>Anas acuta</i> [A054]	
		Red-breasted Merganser <i>Mergus serrator</i> [A069]	
		Oystercatcher <i>Haematopus ostralegus</i> [A130]	
		Golden Plover <i>Pluvialis apricaria</i> [A140]	
		Grey Plover <i>Pluvialis squatarola</i> [A141]	
		Lapwing <i>Vanellus vanellus</i> [A142]	
		Dunlin <i>Calidris alpina</i> [A149]	
		Black-tailed Godwit <i>Limosa limosa</i> [A156]	
		Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	
		Curlew <i>Numenius arquata</i> [A160]	
		Redshank <i>Tringa totanus</i> [A162]	
		Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	
		Common Gull <i>Larus canus</i> [A182]	
		Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	
		Common Tern <i>Sterna hirundo</i> [A193]	
		Wigeon <i>Mareca penelope</i> [A855]	
		Shoveler <i>Spatula clypeata</i> [A857]	
		Wetland and Waterbirds [A999]	

Designated site [code]	Conservation		Connectivity with the Proposed Development
	Objectives version	QIs[code]/SCIs [code]	
		Peregrine <i>Falco peregrinus</i> [A103]	
		Herring Gull <i>Larus argentatus</i> [A184]	
		Chough <i>Pyrrhocorax pyrrhocorax</i> [A346]	

* Indicates a priority habitat under the Habitats Directive.



Client: Orsted Onshore Ireland Midco Ltd

Project: Greenhills Renewable Energy Project

Title: EU Designated Sites

CashelCallan

Cahir

Portlaoise

Tallow

Tramore

Cork

Youghal

Legend:

- RLB Polygon
- Special Areas of Conservation**
- Greenhills Rivers***
- Transitional Waterbodies***
- Coastal Waterbodies***

*NPWS (Jan 2024)
**NPWS (Oct 2024)
***EPA (Jan 2021)

For illustrative purposes only. Map not to scale

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Date:	Revision:	Drawn	Checked	Authorised
12/12/2025	2451 - AP - 05_005	TPL	KC	HW
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Figure 4.1: Designated sites within the considered ZOI of Proposed Development. (1)

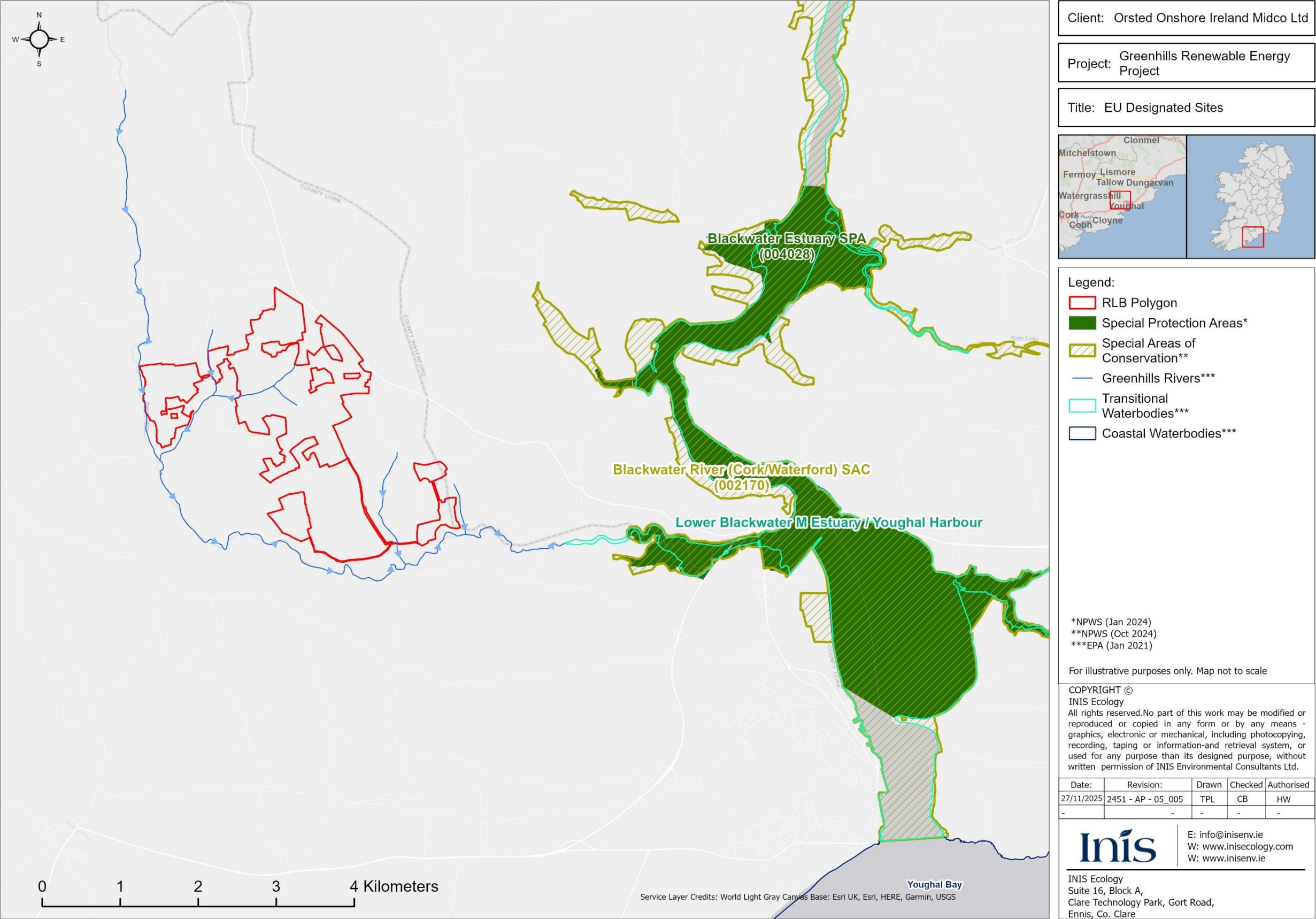


Figure 4.2: Designated sites within the considered ZOI of Proposed Development (2).

4.2. Field study

4.2.1. Habitat Walkover

A total of 29 habitat types (including 15 types of habitat mosaic), comprising 323.28ha (of area habitats) and 44,485 (of linear habitats) in total, occurred within the survey area of the Proposed Development. All habitats present within the field study area and the area occupied by each habitat type are presented in **Tables 4.1** and **4.2**.

Mapped results of habitats are provided in **Figure 4.3 – Figure 4.5**. The dominant habitats included fields of improved agricultural grassland (GA1) (289.06ha), and arable crops (BC1) 22.26ha (Fossitt, 2000). These comprised 89.4% and 6.9% of the total area of the Proposed Development site boundary. Other less common habitats included: tilled land (BC3), mixed broadleaved woodland (WD1) and scrub (WS1).

The linear habitats recorded predominantly consisted of buildings and artificial surfaces in the form of existing roads within the Proposed Development site boundary (BL3) (12,565m), hedgerow (WL1) (11,767m) and hedgerow/treeline mosaic (WL1/WL2) (7,303m) (Fossitt, 2000). No habitats within the ecological baseline were potential candidates to be Annex I habitats of any condition.

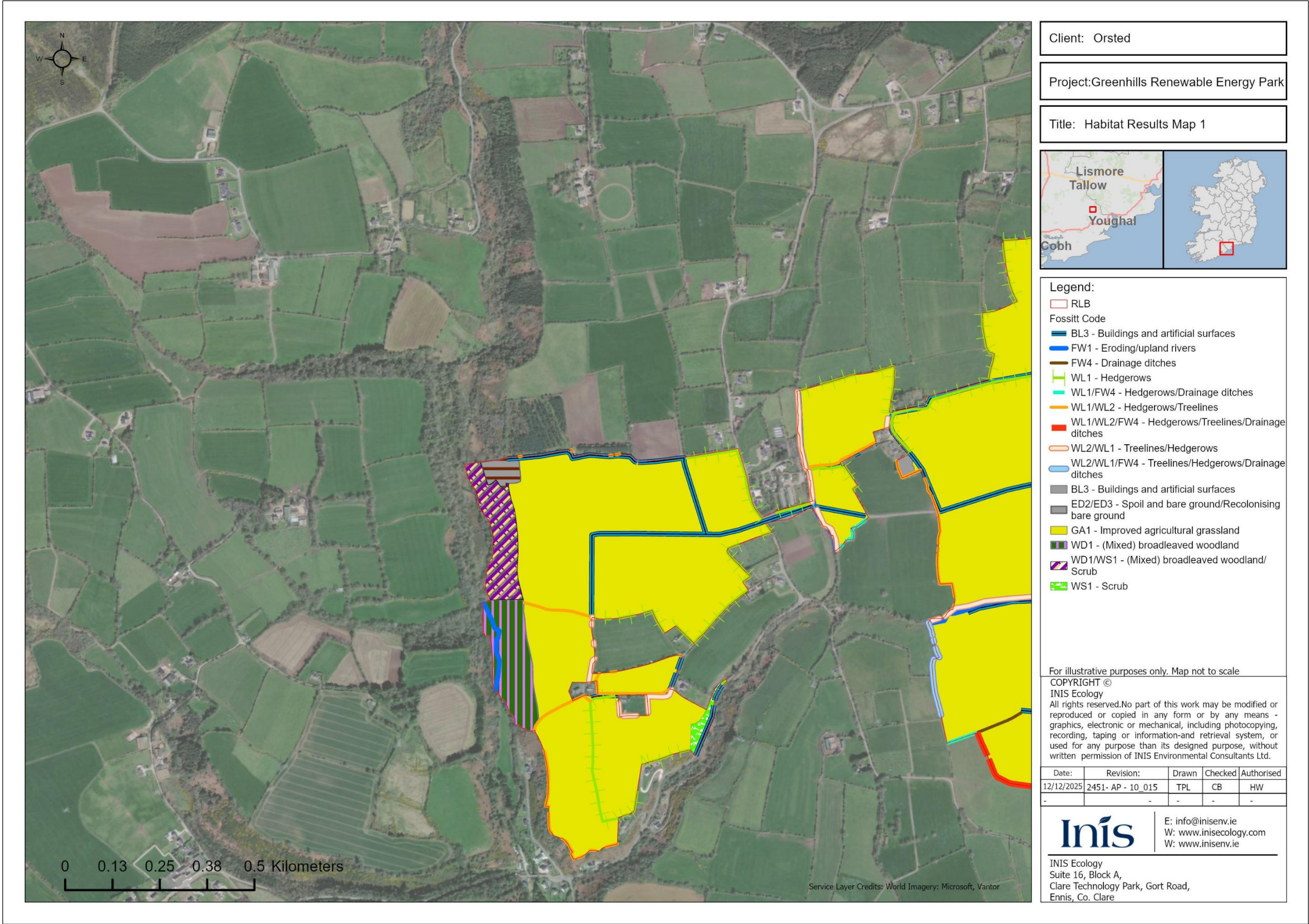
A map showing the habitats recorded across the Proposed Development is provided in **Figure 4.3 – Figure 4.5**.

Table 4.1: Linear habitat type and coverage within the Proposed Development site.

Fossitt Code	Habitat Type	Length (m)
BL1	Stone walls and other stonework	18
BL1/WL1	Stone walls and other stonework/Hedgerows	63
BL3	Buildings and artificial surfaces	12,566
FW1	Eroding/upland rivers	1,538
FW2	Depositing/lowland rivers	7
FW4	Drainage ditches	127
WL1	Hedgerows	11,767
WL1/BL1	Hedgerows/Stone walls and other stonework	224
WL1/BL3	Hedgerows/Buildings and artificial surfaces	195
WL1/FW4	Hedgerows/Drainage ditches	2,081
WL1/WL2	Hedgerows/treelines	7,303
WL1/WL2/FW4	Hedgerows/Treelines/Drainage ditches	616
WL2	Treelines	918
WL2/BL1	Treelines/Stone walls and other stonework	52
WL2/WL1	Treelines/hedgerows	5,680
WL2/WL1/BL1	Treelines/Hedgerows/Stone walls and other stonework	122
WL2/WL1/FW4	Treelines/Hedgerows/Drainage ditches	573
WS1	Scrub	636

Table 4.2: *Habitat type and coverage within the Proposed Development site.*

Fossitt Code	Habitat Type	Area (ha)
BC1	Arable Crops	22.26
BL3	Buildings and artificial surfaces	2.37
BL3/GA2	Buildings and surfaces/Amenity grassland (improved)	0.005
ED2/ED3	Spoil and bare ground/Recolonising bare ground	0.63
GA1	Improved agricultural grassland	289.06
GA2	Recolonising bare ground	0.002
GA2/WS1/WD5	Recolonising bare ground/Scrub/Scattered trees and parkland	0.29
WD1	(Mixed) broadleaved woodland	3.26
WD1/WS1	(Mixed) broadleaved woodland/Scrub	2.65
WD4	Conifer plantation	0.03
WS1	Scrub	2.65
WS1/GA1	Scrub/Improved agricultural grassland	0.07



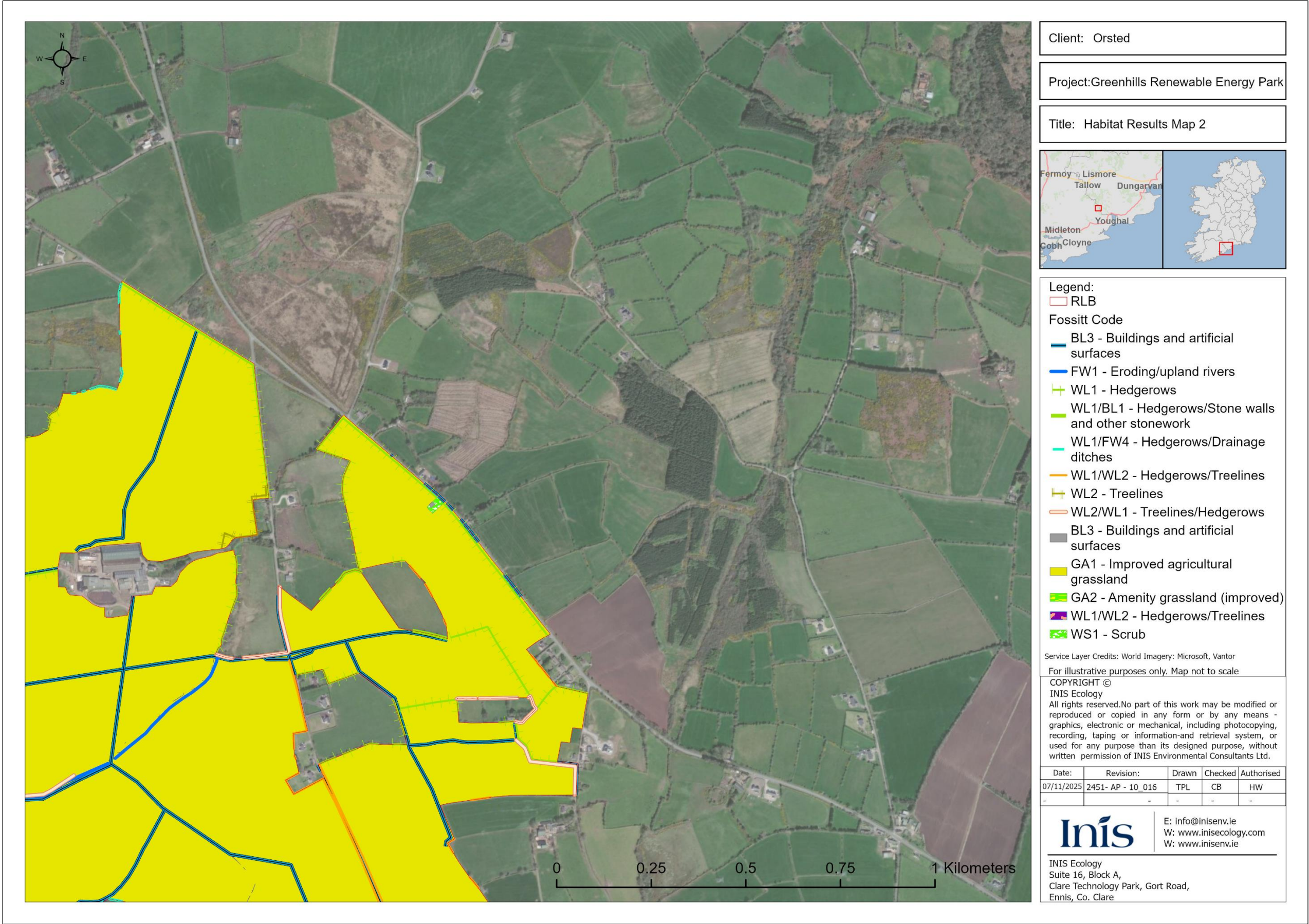


Figure 4.4: Habitat Results Map 2.

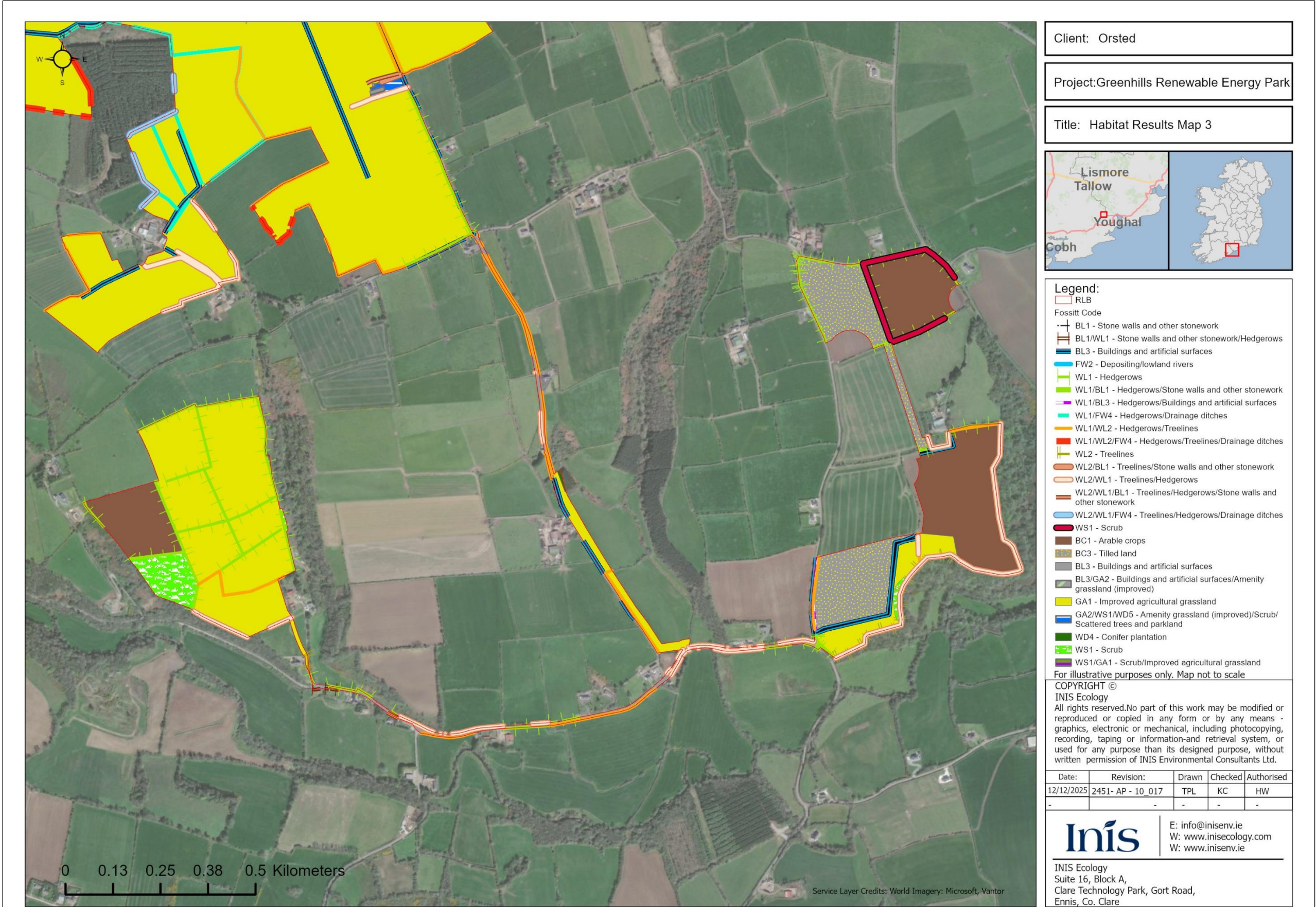


Figure 4.5: Habitat Results Map 3.

4.2.2. Invasive Species Walkover

A total of 18 records of invasive species were recorded within the Proposed Development site boundary (Figure 4.6 and 4.7; Table 4.3).

Fallow Deer was recorded onsite on 28th February 2025. Secondary evidence of Fallow Deer was recorded in various locations onsite on 27th January, 11th February, and 12th March 2025. Secondary evidence of American Mink was recorded onsite on 28th March 2025.

Cherry Laurel *Prunus laurocerasus* was recorded in eight different stretches of hedgerow/treeline, six of which were within the Proposed Development redline boundary along the 33kV underground grid connection (UGC) route between the western and northern field parcels during surveys on 27th March and 19th August 2025. Japanese Knotweed was also recorded in a stretch of hedgerow within a private property adjacent to the 33kV UGC route and the access route for the south-west solar array field parcel on 19th August 2025. (Figure 4.6 and 4.7; Table 4.3).

Table 4.3: Invasive Species Results.

Date	Species	Location (ITM)	Area/Length (Ha/m)	Designation	Notes
Invasive Faunal Species					
27/01/2025	Fallow Deer	603471.45, 581698.38	NA	First Schedule (S.I. 374/2024)	Footprint found along hedgerow
27/01/2025	Fallow Deer	603134.73, 581979.43	NA	First Schedule (S.I. 374/2024)	Feeding
11/02/2025	Fallow Deer	601459.38, 582510.60	NA	First Schedule (S.I. 374/2024)	Well defined trail. Presence of hoof prints
28/02/2025	Fallow Deer	603228.46, 581522.05	NA	First Schedule (S.I. 374/2024)	Presence of species
12/03/2025	Fallow Deer	605030.26, 580377.72	NA	First Schedule (S.I. 374/2024)	Hoof prints evident
12/03/2025	Fallow Deer	605126.11, 580523.44	NA	First Schedule (S.I. 374/2024)	Heavily used track
12/03/2025	Fallow Deer	605421.73, 580558.25	NA	First Schedule (S.I. 374/2024)	Heavily worn track along hedgerow
12/03/2025	Fallow Deer	605188.71, 580871.04	NA	First Schedule (S.I. 374/2024)	Heavily used area
28/03/2025	American Mink	605197.36, 580398.80	NA	First Schedule (S.I. 374/2024)	Good requirements for Otter. Mink footprints visible along sections of river
Invasive Alien Plant Species					
27/03/2025	Cherry Laurel	602204.12, 582489.35	1m	High Impact Invasive Species	
27/03/2025	Cherry Laurel	602196.24, 582485.03	5m	High Impact Invasive Species	Quite a tall plant.
27/03/2025	Cherry Laurel	602138.49, 582472.97	2m	High Impact Invasive Species	
19/08/2025	Cherry Laurel	604027.01, 580138.27	35m	High Impact Invasive Species	

Date	Species	Location (ITM)	Area/Length (Ha/m)	Designation	Notes
19/08/2025	Cherry Laurel	603998.27, 580124.66	12m	High Impact Invasive Species	Situated along wall of premises
19/08/2025	Cherry Laurel	603827.36, 580161.66	50m	High Impact Invasive Species	Outside of RLB
19/08/2025	Japanese Knotweed	603732.63, 580203.68	5m	First Schedule (S.I. 374/2024) Third Schedule (S.I. 477/2011)	Very tall in height and dense
19/08/2025	Cherry Laurel	603697.79, 580229.55	5m	High Impact Invasive Species	Located at entrance of gate outside of RLB
19/08/2025	Cherry Laurel	604170.80, 581058.81	25m	High Impact Invasive Species	Two individual plants present along with ornamental species

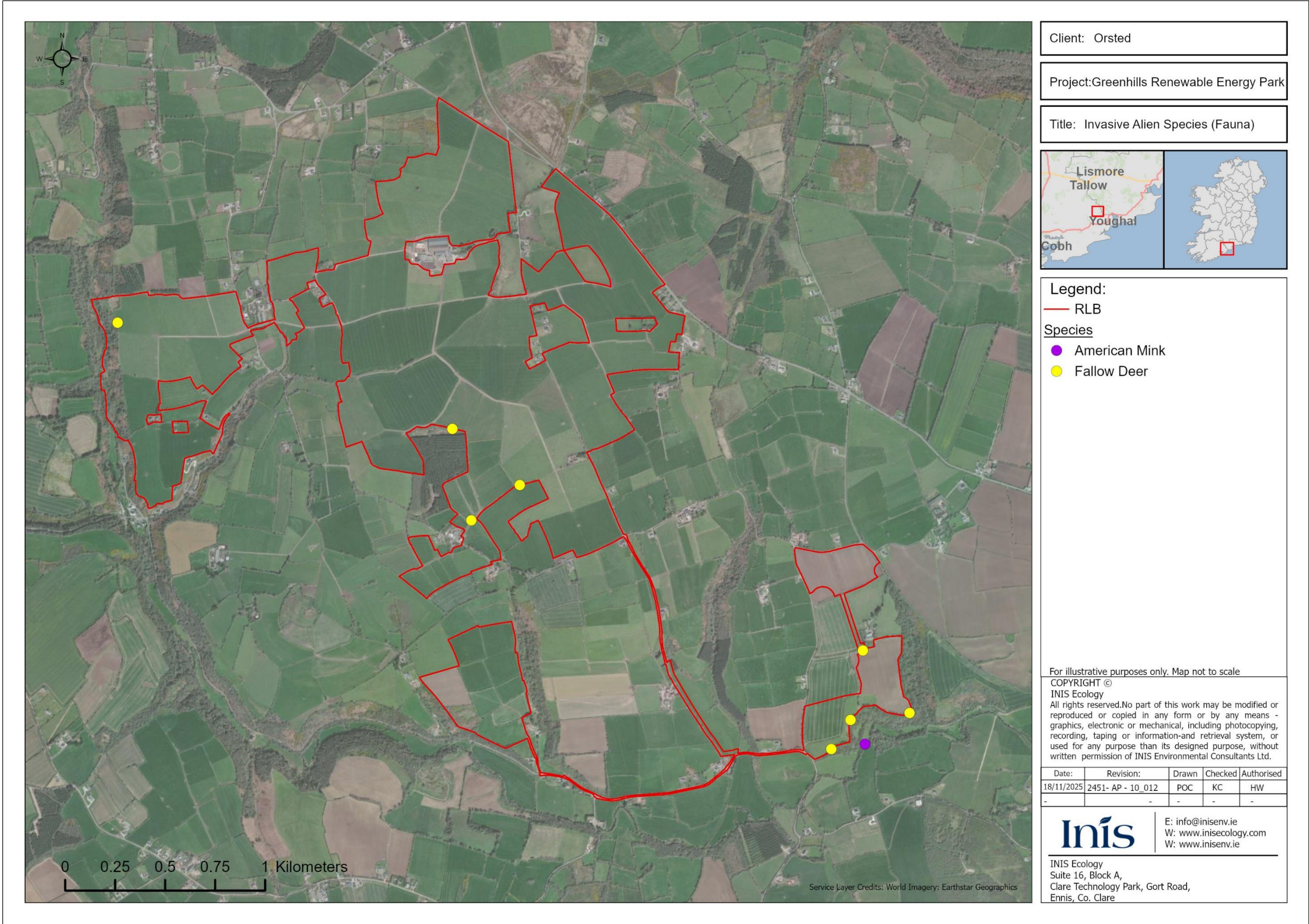


Figure 4.6: Invasive Alien Species (Fauna).

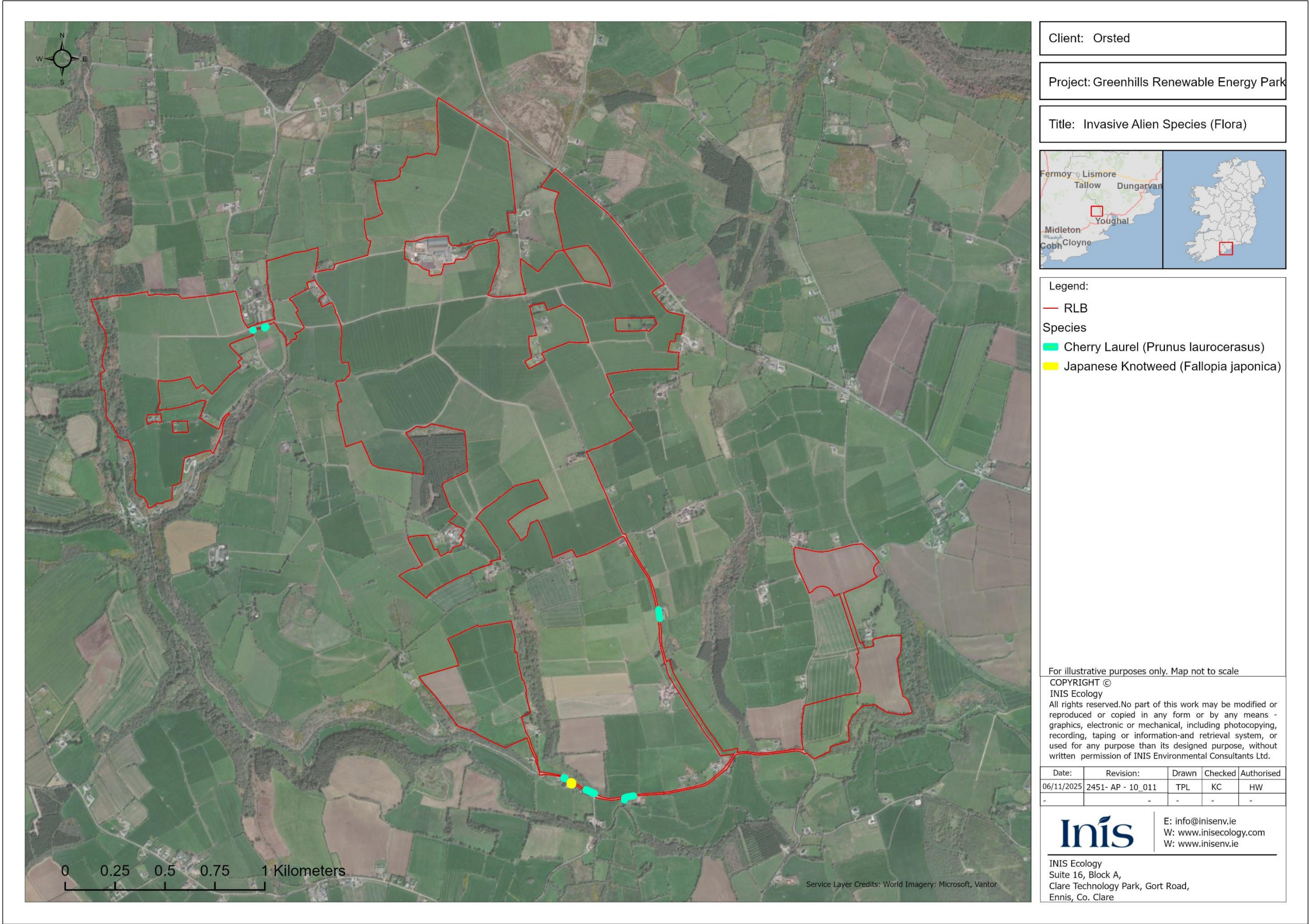


Figure 4.7: Invasive Alien Species (Flora).

4.2.3. Otter

No sightings were observed during Otter surveys within the Redline Boundary; however potential Otter footprints were recorded on 27th and 28th March 2025. The Tourig River located downstream of the Proposed Development was found to have 'High' suitability for Otter, offering both foraging and breeding opportunities (**Table 4.4; Figure 4.8**).

Table 4.4: Terrestrial Mammal Survey Results.

Survey Type	Date	ITM	Species	Notes
Field Assessment	28/02/2025	603580.24, 580552.83	Otter	Low/Intermediate suitability. Potential for species to move through area, unlikely to set up holt.
Field Assessment	12/03/2025	605076.90, 580229.90	Otter	Although no evidence found, it is considered that the river offers an opportunity in terms of foraging and potential breeding.
Field Assessment	12/03/2025	604630.21, 581502.71	Otter	Low/negligible suitability, shallow, narrow and fairly overgrown.
Field Assessment	27/03/2025	602222.14, 582688.09	Otter	Shallow, narrow, overgrown section of stream/river.
Field Assessment	27/03/2025	602246.68, 582551.41	Otter	Shallow, narrow, overgrown section of stream/river.
Field Assessment	27/03/2025	602306.22, 582410.77	Otter	Shallow, narrow, overgrown section of stream/river.
Field Assessment	27/03/2025	601321.85, 582576.33	Otter	Although no direct evidence found, it is considered that this section holds opportunities for the species.
Field Assessment	27/03/2025	601382.53, 582434.74	Otter	Although no direct evidence found, it is considered that this section holds opportunities for the species.
Field Assessment	27/03/2025	601392.49, 582405.54	Otter	Potential footprint
Field Assessment	27/03/2025	601395.06, 582394.28	Otter	Evidence digging/scratching along sand bank
Field Assessment	27/03/2025	601416.58, 582021.15	Otter	Potential footprint faded and incomplete. General area has high suitability.
Field Assessment	28/03/2025	605420.41, 580452.54	Otter	No direct signs found but area holds suitable requirements.
Field Assessment	28/03/2025	605197.36, 580398.80	Otter	Good requirements for the species.
Field Assessment	28/03/2025	605059.71, 580230.13	Otter	Series of footprints, large, a little bit old to accurately define.

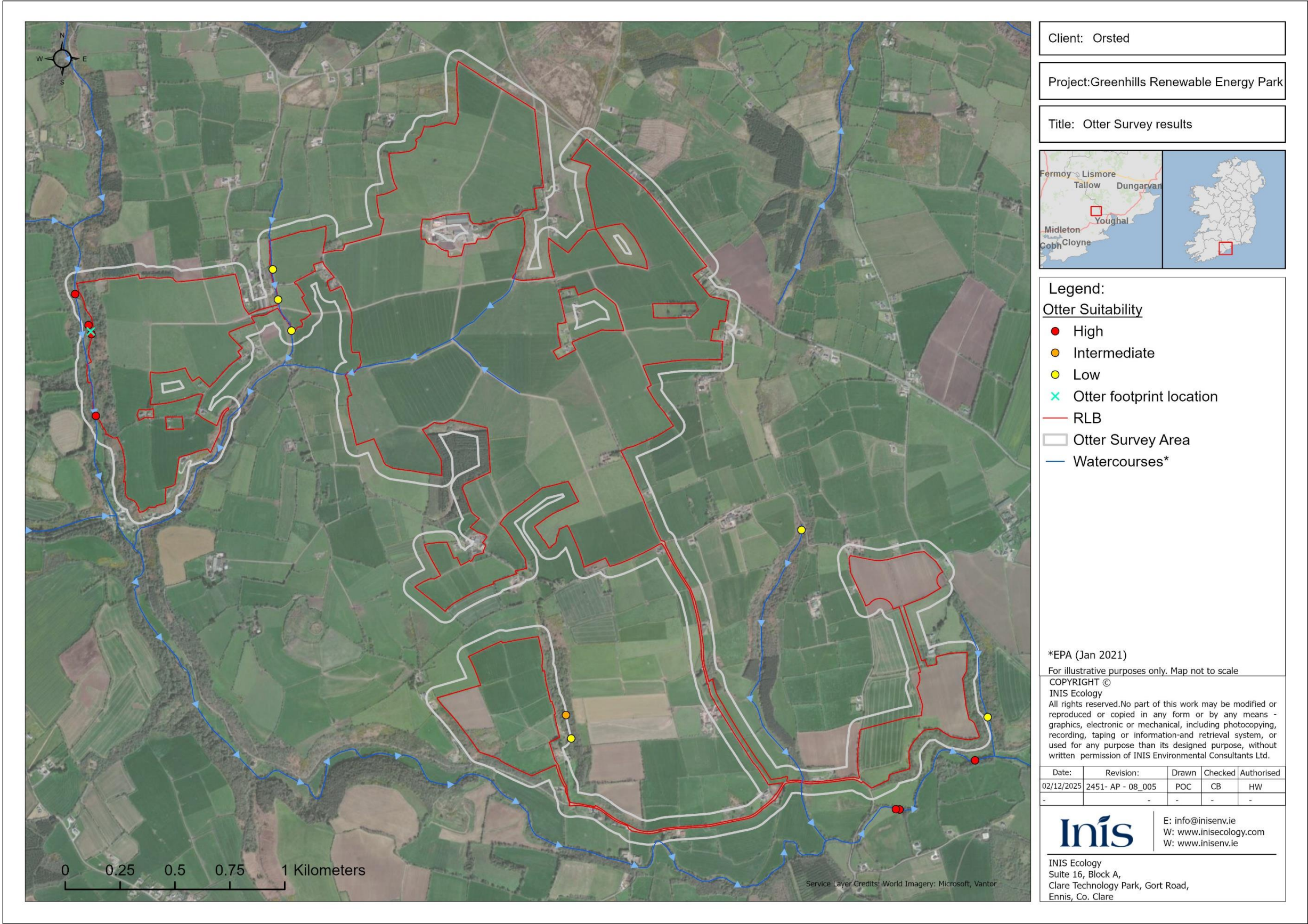


Figure 4.8: Otter Footprint Location.

4.2.4. Birds

A number of gulls, wetland and waterbird species listed as SCIs were recorded within the wider receiving environment of the Proposed Development. These species are listed below.

4.2.4.1. I-WeBS

A total of five species listed as SCIs of relevant European site were recorded during the I-WeBS. Great Black-backed Gull *Larus marinus* and Grey Heron *Ardea cinerea* are Green-listed species (Gilbert *et al.*, 2021), Black-headed Gull *Chroicocephalus ridibundus*, Herring Gull and Lesser Black-backed Gull are on the BoCCI Amber list (Gilbert *et al.*, 2021) (**Table 4.5; Figure 4.9**).

Table 4.5: I-WeBS results.

Species	Jan	Feb	Mar	May	Jun	Total
Black-headed Gull	22	-	-	-	-	22
Great Black-backed Gull	6	-	-	-	-	6
Grey Heron	-	1	-	-	-	1
Herring Gull	-	-	-	-	7	7
Lesser Black-backed Gull	41	1	-	2	3	47

4.2.4.2. Water Connectivity Surveys

A total of four species listed as SCIs for relevant European sites were recorded during water connectivity surveys. These species were Great Black-backed Gull, Herring Gull, Lesser Black-backed Gull and Snipe *Gallinago gallinago*. Great Black-backed Gull is on the BoCCI Green list (Gilbert *et al.*, 2021). Herring Gull and Lesser Black-backed Gull are on the BoCCI Amber list, and Snipe is on the BoCCI Red list (Gilbert *et al.*, 2021) (**Table 4.6**).

Flightline activity for all species was recorded within the Proposed Development site boundary (**Figure 4.10-4.13**).

Table 4.6: Water Connectivity VP Species Counts.

Species	Jan	Feb	Mar	Apr	May	Jun	Total
Great Black-backed Gull	3	141	-	-	-	-	144
Herring Gull			-	-	-	15	15
Lesser Black-backed Gull	30	189	-	-	-	15	234
Snipe	5	-	1	-	-	-	6

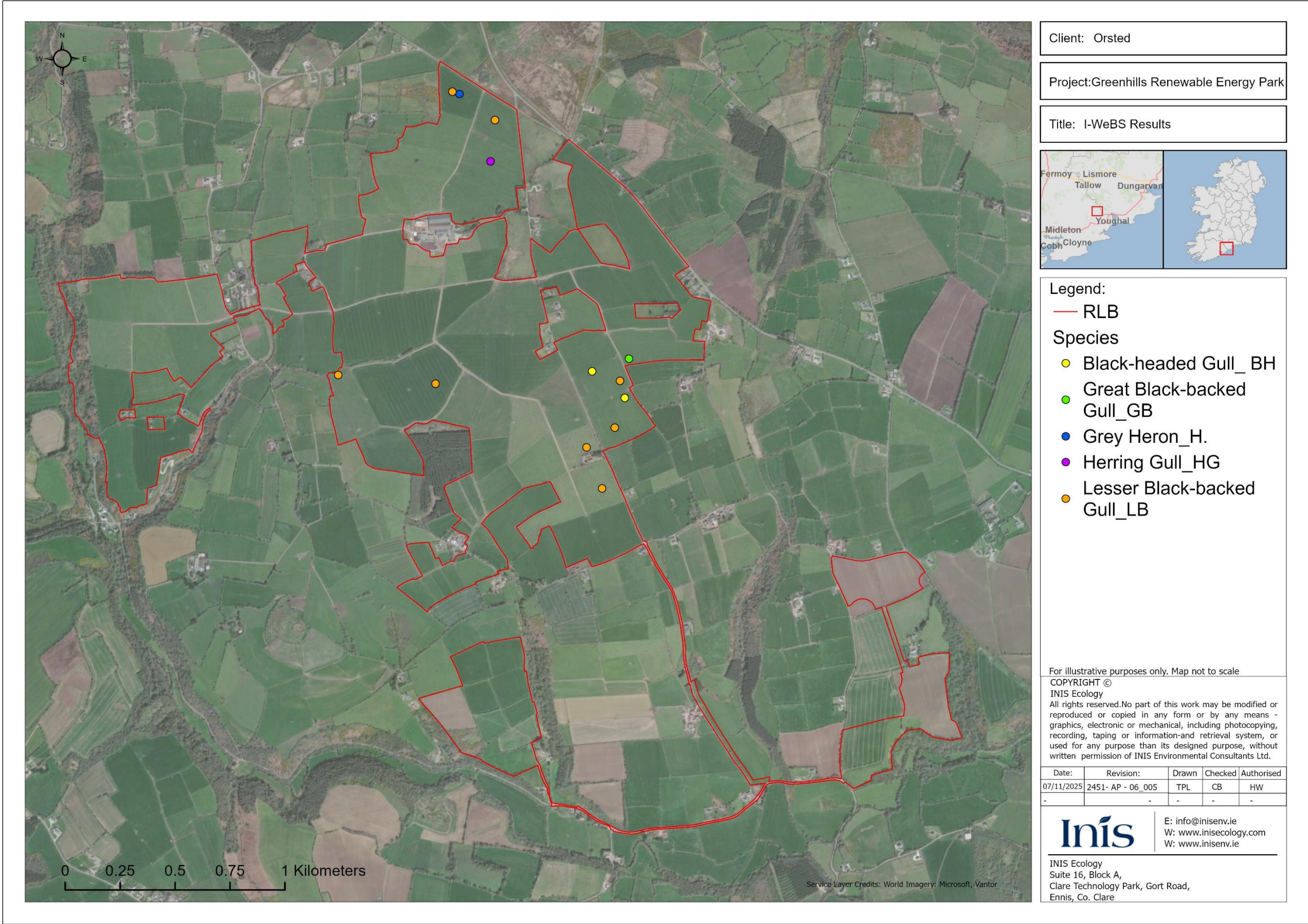


Figure 4.9: I-WeBS Results.

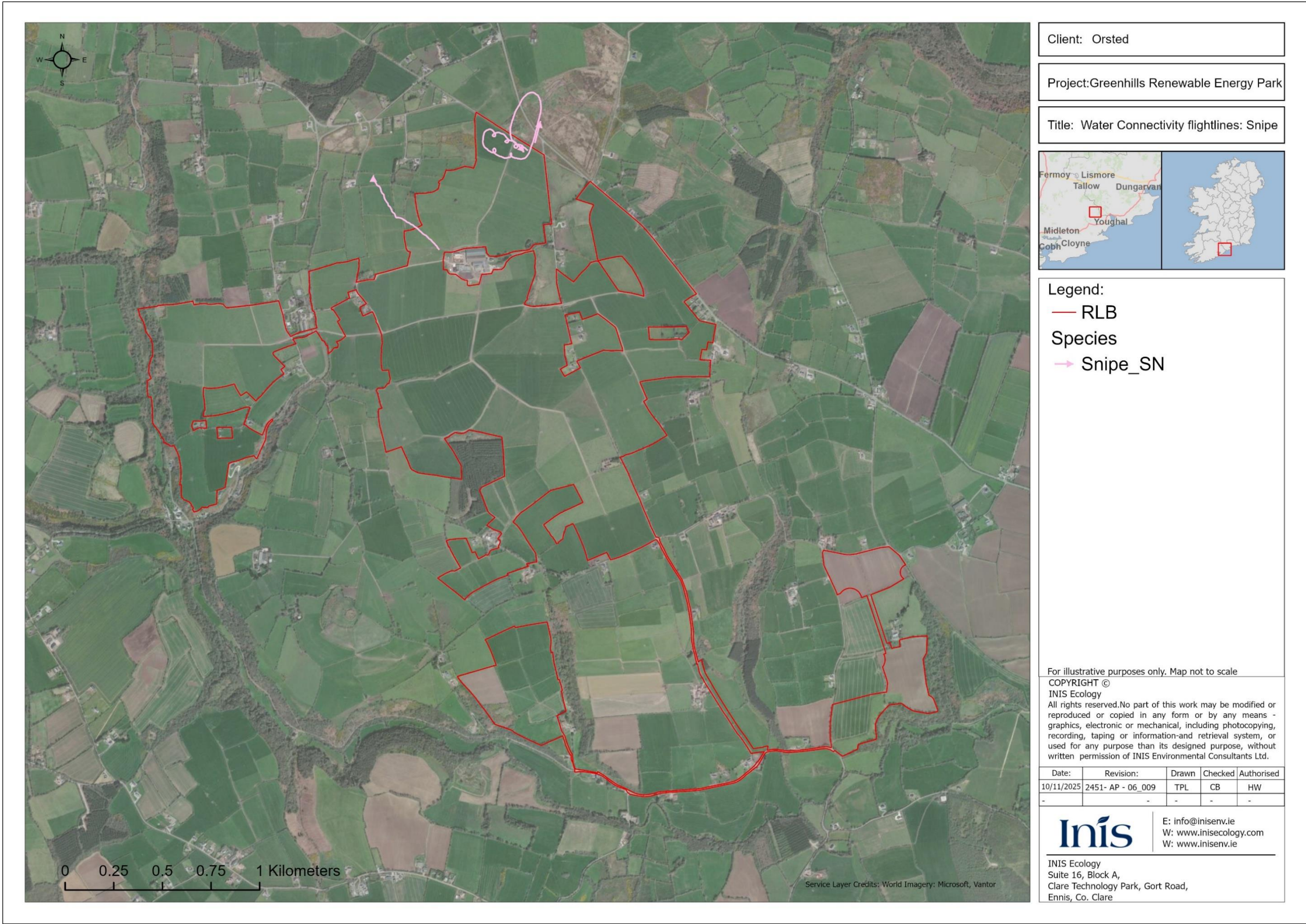


Figure 4.10: Water Connectivity Flightlines: Snipe.

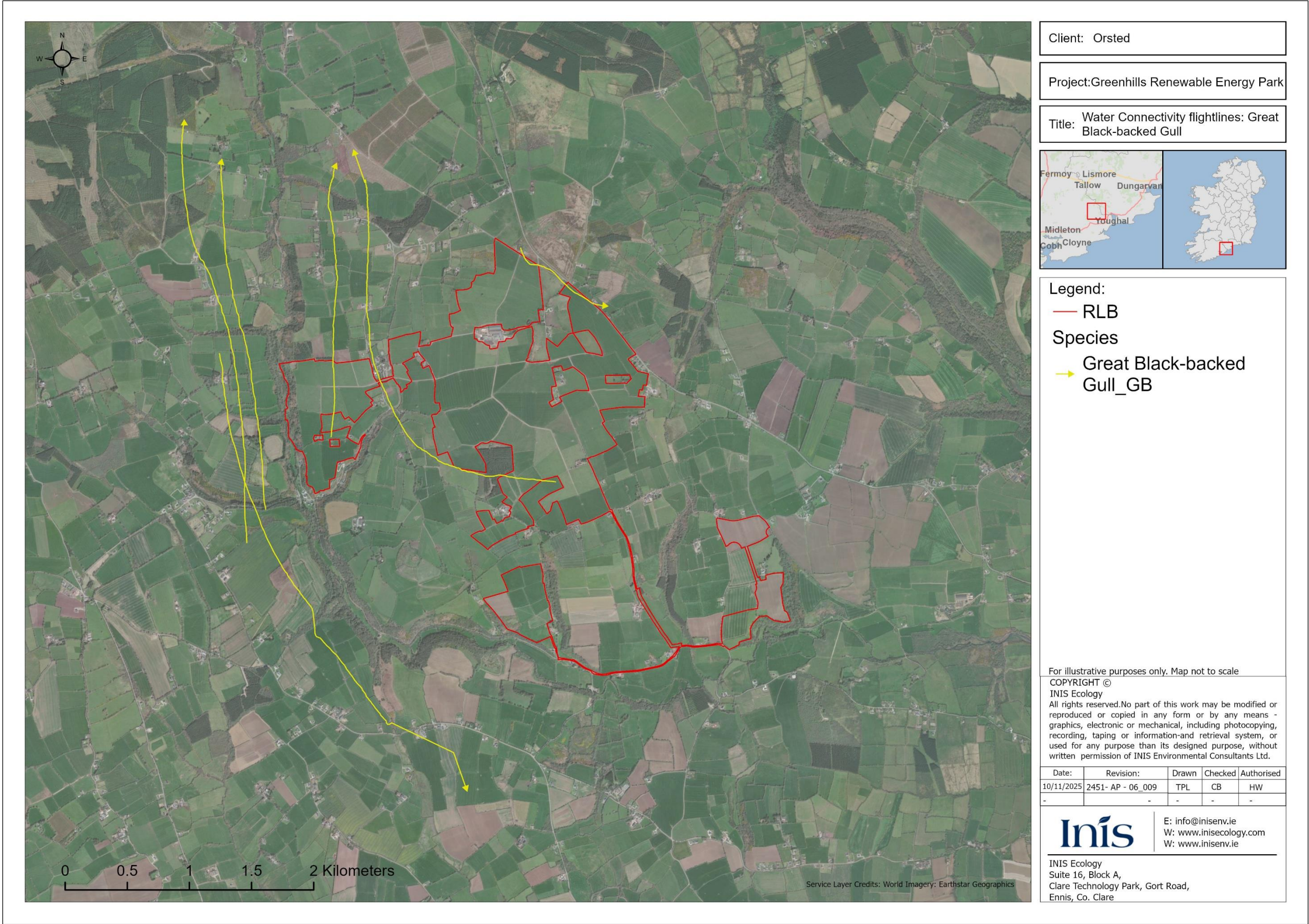


Figure 4.11: Water Connectivity Flightlines: Great Black-backed Gull.

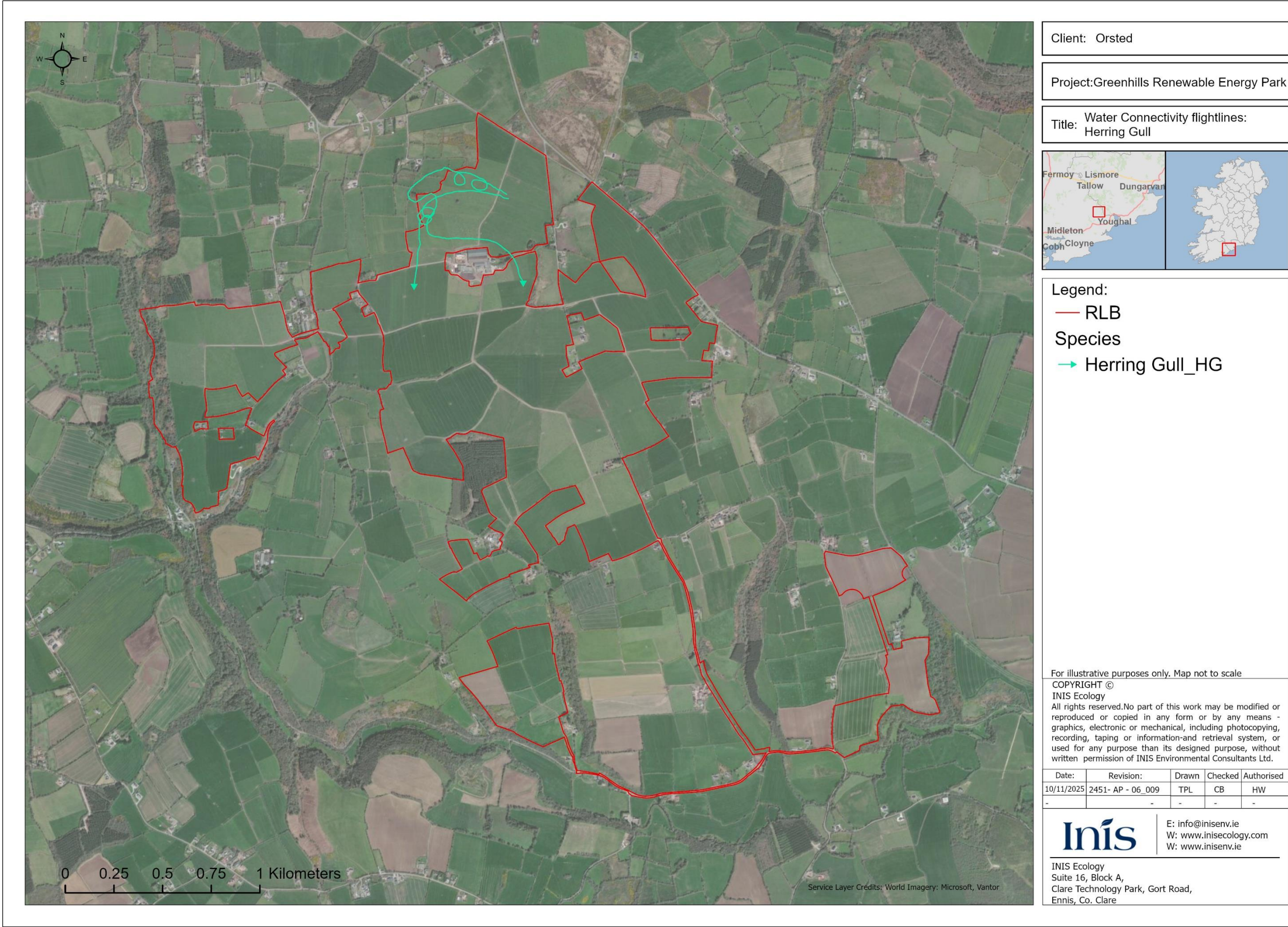


Figure 4.12: Water Connectivity Flightlines: Herring Gull.

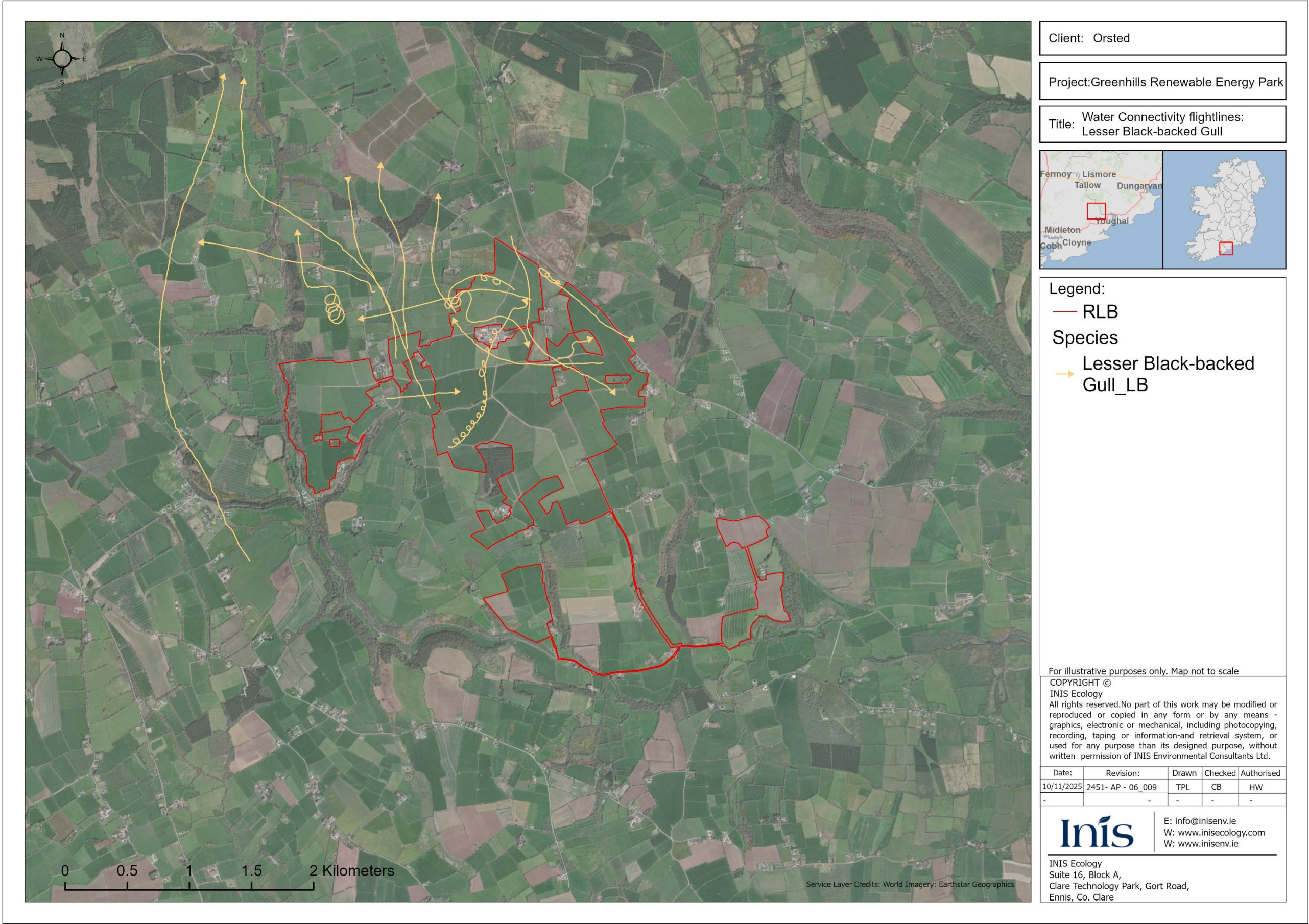


Figure 4.13: Water Connectivity Flightlines: Lesser Black-backed Gull.

5. SCREENING OF LIKELY SIGNIFICANT EFFECTS

5.1. Screening Process

The Screening process examines the likely effects of the Proposed Development, as described, either alone or in combination, with other projects or plans, upon a Natura 2000 site and considers whether it can be objectively concluded that these effects will not be significant.

5.2. Screening: Is the Proposed Development Directly Connected to or Necessary for Management of a European site?

For a project or plan to be 'directly connected with or necessary to the management of the site', the 'management' component must refer to management measures that are for conservation purposes, and the 'directly' element refers to measures that are solely conceived for the conservation management of a site and not direct or indirect consequences of other activities.

No, the Proposed Development is not directly connected to, or necessary for the management of, a European site.

5.3. Assessment of Source-Pathway-Receptor Model

As described in the methodology (**Section 3**), current guidance informing the approach to screening for AA defines the ZoI of a Proposed Development as the geographical area over which it could affect the receiving environment in a way that could have significant effects on the QIs of a European site. It is recommended that this is established on a case-by-case basis using the S-P-R model. No works are proposed within any EU designated site. However, the following elements of the Proposed Development were identified and assessed for their potential effect and connectivity to European sites.

A S-P-R model has been used to establish which Natura 2000 sites could occur within the ZoI of potential indirect impacts. Under such a model the Proposed Development represents the source. Potential impact pathways are restricted to air and hydrological pathways. Five European sites have potential connectivity to the Proposed Development; therefore, the relevant pathways are mobile species pathways and surface run-off from the Proposed Development in the event of rainfall, via the Tourig river which runs directly into the SAC.

Given the project relates to construction works including site entrances and access tracks, ground mounting of solar arrays using screw or pile driving, construction of the substation, BESS cut and fill operations, and concrete or ballast footing, and no works are proposed within a designated site or in areas with potential to be used by in-situ mobile species of the relevant designated sites, and the nearest surface water features are the Ballyneague, Knocknagappagh, and Carriganass streams that flow into the Tourig river, it is considered that only those Natura 2000 sites that are connected to the project by pathways such as hydrological and ex-situ mobile species pathways lie within the ZoI of the project.

The site synopses and conservation objectives of these sites, as per the NPWS website (www.npws.ie), were consulted and reviewed at the time of preparing this report in November 2025. Where potential

pathways for significant effects are identified, the site is included within the ZoI of the Proposed Development and further assessment is required.

The result of this preliminary screening concluded that there is a total of one SAC and four SPAs that are located within the ZoI of the Proposed Development. The distances to each site listed are taken from the nearest possible point of the Proposed Development boundary to nearest possible point of each Natura 2000 site (**Table 4.2**).

In the context of the above summary, **Table 5.1** assesses a specific S-P-R model for the Proposed Development for the QIs and SCIs listed for the relevant designated sites.

Table 5.1: S-P-R Model for the Proposed Development.

Source of Potential Effect	Description of Pathway	Potential Receptors of the Effect
Construction Phase		
Disturbance: Construction activities (Noise/vibration)	Air	Potential disturbance to mobile SCIs/QIs including birds and mammals that are noise sensitive species, are likely as a result of increased noise construction activities. Thus, this source is considered further for scoping of effects.
Disturbance: Human presence (Noise/visual disturbance)		Potential disturbance to mobile SCIs/QIs including birds and mammals, is possible as a result of increased physical presence from humans during the construction phase of the Proposed Development. Thus, this source is considered further for scoping of effects.
Disturbance: Vehicle activity (Noise/visual disturbance)		Potential disturbance to mobile SCIs/QIs including birds and mammals is possible as a result of increased noise from the movement of vehicles during the construction phase of the Proposed Development. Thus, this source is considered further for scoping of effects.
Mortality: Vehicle Activity, Excavation Pits, Collector Drains	Direct	Direct mortality as a result of construction activities onsite is possible for QIs and SCIs of European sites within the relevant Zol. Thus, this source is considered further for scoping of effects.
Habitat loss/fragmentation (Construction activities)		The various habitats present on the Proposed Development site are of low foraging suitability to bird species in general. There is potential for these habitats to be of value to ex-situ SCIs, as such likelihood of significant effects is assessed for SPAs within the relevant Zol. Ex-situ Otter habitat may be fragmented as a result of the Proposed Development; therefore, likelihood of significant effects is also assessed for this QI. Thus, this source is considered further for scoping of effects.
Pollution/ Contamination: Direct water run-off	Hydrological	Surface water run-off carrying suspended silt or contaminants – hydrocarbons could cause potential contamination within the catchment area by flowing into the Tourig river. Construction machinery, cut and fill operations, installation of the 33kV interconnector cables and concrete foundation works pose the highest risk for this source-pathway impact. Thus, this source is considered further for scoping of effects.
Spread of invasive species	Hydrological/Direct	Japanese Knotweed is present along the Youghal road. Due to its aggressive growth and propagation abilities, it poses threats to local habitats of importance as well as threats to QI habitats via hydrological pathways where vehicles carrying plant particles interact with the watercourse crossings onsite. Any spread of Japanese Knotweed within the site boundary or within the wider environment as a result of the Proposed Development poses high risk to native biodiversity and may result in loss of habitat for QI species. The spread of Cherry Laurel is considered unlikely given the managed nature of the land along existing farm roads with little likelihood for the spread of plant material or seeds by construction vehicles during the Proposed Development's construction phase. As such, Cherry

		Laurel is not considered for LSEs on QIs/SCIs identified as potential receptors. Thus, this source is considered further for scoping of effects.
Operation Phase		
Disturbance: Operational phase activities (Noise/vibration)	Air	Potential disturbance to mobile SCIs/QIs including birds and mammals is possible as a result of increased noise from humans and the movement of vehicles during the maintenance events and operating turbines of the Proposed Development. Thus, this source is considered further for scoping of effects.
Disturbance: Human presence (Noise/visual disturbance)		Potential disturbance to mobile SCIs/QIs including birds and mammals is possible as a result of increased noise from humans during the operational phase of the Proposed Development. Connectivity to give rise to an ex-situ impact varies depending on the species. Thus, this source is considered further for scoping of effects.
Disturbance: Solar arrays (Visual disturbance)		No empirical evidence supports significant disturbance related effects from solar arrays on bird SCIs (Walston <i>et al.</i> , 2016) Thus, this source is not considered further for scoping of effects.
Mortality: Vehicle Activity/collision with substation powerline infrastructure	Direct	Direct mortality as a result of vehicle use during operational activities onsite is an unlikely event for QIs and SCIs of European sites within the relevant ZOI and is not considered further in this report. None of the relevant SCIs are associated with electrocution events with substations, overhead power lines or transformers. Thus, this source is not considered further for scoping of effects.
Injury to avifauna via interaction with solar arrays		No empirical evidence supports significant disturbance related effects from solar arrays on bird SCIs (Walston <i>et al.</i> , 2016). Fatalities at solar farm have been primarily attributed to evaporation ponds in warmer climates, which are not required in Ireland for solar farms (Jeal <i>et al.</i> , 2019) Thus, this source is not considered further for scoping of effects.
Decommissioning Phase		
Disturbance: Construction activities (Noise/vibration)	Air	Potential disturbance to mobile SCIs/QIs including birds and mammals that are noise sensitive species, are likely as a result of increased noise construction activities. Thus, this source is considered further for scoping of effects.
Disturbance: Human presence (Noise/visual disturbance)		Potential disturbance to mobile SCIs/QIs including birds and mammals, is possible as a result of increased physical presence from humans during the construction phase of the Proposed Development. Thus, this source is considered further for scoping of effects.
Disturbance: Vehicle activity (Noise/visual disturbance)		Potential disturbance to mobile SCIs/QIs including birds and mammals is possible as a result of increased noise from the movement of vehicles during the construction phase of the Proposed Development. Thus, this source is considered further for scoping of effects.

Mortality: Vehicle Activity,	Direct	Direct mortality as a result of construction activities onsite is possible for QIs and SCIs of European sites within the relevant Zol. Thus, this source is considered further for scoping of effects.
Habitat loss/fragmentation (Construction activities)		The various habitats present on the Proposed Development site are of low foraging suitability to bird species in general. Furthermore, the decommissioning phase will only involve removal of arrays, transformers and cables requiring minimal excavation works. Thus, this source is considered further for scoping of effects.

5.4. Assessment of Connectivity to European Sites

Potential pathways between the Proposed Development and European sites were identified in **Table 5.1**. In **Table 5.2**.

A number of sites were screened out based on the extent of distance between the Proposed Development and the specific site, the absence of any terrestrial, hydrological connectivity or other pathways mobile QIs/SCIs and the non-mobile nature of their QIs:

- Ballymacoda (Clonpriest and Pillmore) SAC
- Ardmore Head SAC
- Helvick Head to Ballyquin SPA

The Blackwater River (Cork/Waterford) SAC and Blackwater Estuary SPA are located 3.5km at their closest points to the Proposed Development. As per **Table 5.1** there is a potential indirect hydrological pathway between the Proposed Development and the European sites via surface run-off into the Tourig river, which is connected to the European sites, and ex-situ pathways for mobile species and ex-situ aquatic habitats.

The remaining SPAs (Ballymacoda Bay SPA, Ballycotton Bay SPA, and Cork Harbour SPA) are considered due to Proposed Development being within the mean foraging range for some of their SCIs. Therefore, per **Table 5.1**, there is a potential indirect mobile species pathway between the Proposed Development and these European sites.

As such, **the Blackwater River (Cork/Waterford) SAC, Blackwater Estuary SPA, Ballymacoda Bay SPA, Ballycotton Bay SPA, and Cork Harbour SPA are the only European sites within the relevant ZOI and are considered further** for screening based on these sites having potential connectivity with the Proposed Development's potential sources, and potential effects on these sites are assessed for likely significance in **Section 5.5 (Table 5.2)**.

Table 5.2: European sites considered with the S-P-R method to establish notable links between the sources of effects arising from the Proposed Development, and any relevant European sites. Those sites and relevant QIs/SCIs highlighted in yellow are screened in for further assessment.

Designated site [code]	QIs[code]/SCIs [code]	Considered for Screening and Relevant Pathways
Blackwater River (Cork/Waterford) SAC [002170]	Estuaries [1130]	<u>In situ:</u> This SAC is located 3.5km downstream of the Tourig river, which is the nearest point for the Proposed Development's potential surface run-off sources to be connected to this site. Due to the hydrological separation distance between this site and the Proposed Development's nearest contamination source, even in a worst-case scenario of sediment run-off entering the Ballyglavin stream, which continues south until it joins with the Tourig river, contamination will be unlikely to cause any significant effects on the habitats within this SAC. This is based on the extent of dilution between the worst-case scenario source point and the nearest mapped area of the SAC (3.5km downstream), as such in-situ habitats and species are unlikely to experience significant effects as a result of the Proposed Development's construction or post-construction phases. Therefore, this European site is not included in the current screening assessment for this QI. <u>Ex-situ:</u> Two habitats are mapped within the square X08 based on 'Status of EU Protected Habitat and Species' Map Viewer Tool⁴. Per the precautionary principle, these habitats may be present further upstream of the SAC. As such, absent detailed surveys of the Tourig river, both of these QIs are considered for likely significant effects under the precautionary principle. Therefore, this European site is included in the current screening assessment for this QI.
	Mudflats and sandflats not covered by seawater at low tide [1140]	
	Perennial vegetation of stony banks [1220]	
	<i>Salicornia</i> and other annuals colonising mud and sand [1310]	
	Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330]	
	Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	
	Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	
	Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in the British Isles [91A0]	
	*Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0]	
	* <i>Taxus baccata</i> woods of the British Isles [91J0]	
	Freshwater Pearl Mussel <i>Margaritifera margaritifera</i> [1029]	Distribution information regarding the host species for FWPM is not available within the Tourig river at the time of writing. The Proposed Development poses no risk for in-situ effects of this SAC, however, any effect on host fish species within the Tourig River poses potential effects on this QI's reproductive cycle and distribution within the SAC. As such, despite the absence of direct or indirect pathways between this QI and the Proposed Development, this European site is included in the current screening assessment for this QI.
	White-clawed Crayfish <i>Austropotamobius pallipes</i> [1092]	The mapped area for this QI is located within a separate sub-catchment (Blackwater Munster). Given the separation distance between the known area of this QI and the absence of likely

Designated site [code]	QIs[code]/SCIs [code]	Considered for Screening and Relevant Pathways
		significant effect interactions with in-situ habitats and species, this European site is not included in the current screening assessment for this QI. Therefore, this European site is not included in the current screening assessment for this QI.
	Sea Lamprey <i>Petromyzon marinus</i> [1095]	All three <i>Lampetra</i> species have areas mapped for all stages of their respective life cycles within this SAC, no areas are mapped within the Tourig river in proximity to the Proposed Development. However, given the anadromous nature of its life cycle, and suitable river network upstream of the SAC via the Tourig, these species are considered for potential pollution and contamination impacts on ex-situ distribution under the precautionary principle. Therefore, this European site is included in the current screening assessment for this QI.
	Brook Lamprey <i>Lampetra planeri</i> [1096]	
	River Lamprey <i>Lampetra fluviatilis</i> [1099]	
	Twaite Shad <i>Alosa fallax fallax</i> [1103]	Distribution information regarding these species is not available within the Tourig river at the time of writing. However, given suitable river network upstream of the SAC via the Tourig, these species are considered for potential pollution and contamination impacts on ex-situ distribution. This European site is included in the current screening assessment for this QI. Therefore, this European site is included in the current screening assessment for this QI.
	Salmon <i>Salmo salar</i> [1106]	
	Otter <i>Lutra lutra</i> [1355]	Ample suitable Otter habitat was recorded among the multiple water courses onsite, and secondary evidence of Otter was recorded on the Tourig river. Therefore, Otter is assumed to be present onsite and is considered a likely receptor for contamination and disturbance as a result of the Proposed Development. Spread of the invasive species Japanese Knotweed posed risk to the high-value foraging and breeding habitat in the watercourses within the ecological baseline of the Proposed Development. As such, this pathway poses potential for significant effect via habitat loss and fragmentation as a result of Japanese Knotweed establishing in proximity to watercourses. Therefore, this European site is included in the current screening assessment for this QI.
	Killarney Fern <i>Trichomanes speciosum</i> [6985]	Based on information collected during field studies and from the 'Status of EU Protected Habitat and Species' Map Viewer Tool ⁴ , Killarney Fern is not considered a likely receptor for the Proposed Development's contamination sources. Therefore, this European site is not included in the current screening assessment for this QI.
	Golden Plover <i>Pluvialis apricaria</i> [A140]	This SPA is located 2.09km from the nearest point for the Proposed Development. This places the Proposed Development within the foraging range of these SCIs. Given the hydrological
	Lapwing <i>Vanellus vanellus</i> [A142]	

Designated site [code]	QIs[code]/SCIs [code]	Considered for Screening and Relevant Pathways
Blackwater Estuary SPA [004028]	Dunlin <i>Calidris alpina</i> [A149]	connectivity between the Proposed Development and this SPA (3.5km), impacts on this European site require assessing for LSE. Therefore, this European site is included in the current screening assessment for these SCIs.
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	
	Curlew <i>Numenius arquata</i> [A160]	
	Redshank <i>Tringa totanus</i> [A162]	
	Wigeon <i>Mareca penelope</i> [A855]	
	Wetland and Waterbirds [A999]	
Ballymacoda Bay SPA [004023]	Teal <i>Anas crecca</i> [A052]	Yes, the mean foraging ranges for Herring Gull and Black-headed Gull are considered to be 14.9km and 7km respectively (Power <i>et al.</i> , 2021). No other relevant SCIs listed for this SPA have foraging ranges placing them within the relevant ZOI of the Proposed Development. As such, these two SCIs are considered for worst-case scenario ex-situ effects. Therefore, this European site is included in the current screening assessment for these SCIs.
	Ringed Plover <i>Charadrius hiaticula</i> [A137]	
	Golden Plover <i>Pluvialis apricaria</i> [A140]	
	Grey Plover <i>Pluvialis squatarola</i> [A141]	
	Lapwing <i>Vanellus vanellus</i> [A142]	
	Sanderling <i>Calidris alba</i> [A144]	
	Dunlin <i>Calidris alpina</i> [A149]	
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	
	Curlew <i>Numenius arquata</i> [A160]	
	Redshank <i>Tringa totanus</i> [A162]	
	Turnstone <i>Arenaria interpres</i> [A169]	
	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	
	Common Gull <i>Larus canus</i> [A182]	
	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	
	Wigeon <i>Mareca penelope</i> [A855]	
	Wetland and Waterbirds [A999]	

Designated site [code]	QIs[code]/SCIs [code]	Considered for Screening and Relevant Pathways
Ballycotton Bay SPA [004022]	Teal <i>Anas crecca</i> [A052]	The COs for the SPA list the mean foraging range of Lesser Black-backed Gull and Herring Gull to be 43.3km and 14.9km respectively. No other relevant SCIs listed for this SPA have foraging ranges placing them within the relevant Zol of the Proposed Development. As such, these two SCIs are considered for worst-case scenario ex-situ effects. Therefore, this European site is included in the current screening assessment for this SCI.
	Ringed Plover <i>Charadrius hiaticula</i> [A137]	
	Golden Plover <i>Pluvialis apricaria</i> [A140]	
	Grey Plover <i>Pluvialis squatarola</i> [A141]	
	Lapwing <i>Vanellus vanellus</i> [A142]	
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	
	Bar-tailed Godwit <i>Limosa lapponica</i> [157]	
	Curlew <i>Numenius arquata</i> [A160]	
	Turnstone <i>Arenaria interpres</i> [A169]	
	Common Gull <i>Larus canus</i> [A182]	
	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	
	Wetlands [A999]	
Cork Harbour SPA [004030]	Little Grebe <i>Tachybaptus ruficollis</i> [A004]	Yes, the mean foraging range for Lesser Black-backed Gull is considered to be 43.3km (Power <i>et al.</i>, 2021). No other relevant SCIs listed for this SPA have foraging ranges placing them within the relevant Zol of the Proposed Development. As such, this SCI is considered for worst-case scenario ex-situ effects. Therefore, this European site is included in the current screening assessment for this SCI.
	Great Crested Grebe <i>Podiceps cristatus</i> [A005]	
	Cormorant <i>Phalacrocorax carbo</i> [A017]	
	Grey Heron <i>Ardea cinerea</i> [A028]	
	Shelduck <i>Tadorna tadorna</i> [A048]	
	Teal <i>Anas crecca</i> [A052]	
	Pintail <i>Anas acuta</i> [A054]	
	Red-breasted <i>Merganser Mergus serrator</i> [A069]	
	Oystercatcher <i>Haematopus ostralegus</i> [A130]	
	Golden Plover <i>Pluvialis apricaria</i> [A140]	
	Grey Plover <i>Pluvialis squatarola</i> [A141]	
	Lapwing <i>Vanellus vanellus</i> [A142]	

Designated site [code]	QIs[code]/SCIs [code]	Considered for Screening and Relevant Pathways
	Dunlin <i>Calidris alpina</i> [A149]	
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	
	Curlew <i>Numenius arquata</i> [A160]	
	Redshank <i>Tringa totanus</i> [A162]	
	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	
	Common Gull <i>Larus canus</i> [A182]	
	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	
	Common Tern <i>Sterna hirundo</i> [A193]	
	Wigeon <i>Mareca penelope</i> [A855]	
	Shoveler <i>Spatula clypeata</i> [A857]	
	Wetland and Waterbirds [A999]	

5.5. Assessment of Likely Significant Effects - Scoping of Effects

A European site will only be at risk from LSEs where a S-P-R link exists between the Proposed Development and the European site. All of the European sites considered under the S-P-R method are listed in **Table 5.2**, with five European sites as listed identified to have a S-P-R link of note to the Proposed Development (**Table 5.3**), namely:

- 002170 Blackwater River (Cork/Waterford) SAC;
- 004028 Blackwater Estuary SPA;
- 004023 Ballymacoda Bay SPA;
- 004022 Ballycotton Bay SPA; and
- 004030 Cork Harbour SPA.

Table 5.3: Overview of screened in European sites.

European site	Summary (taken from Site Synopsis available via NPWS)
Blackwater River (Cork/Waterford) SAC (002170)	The River Blackwater (Site Code: 002170) is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall, the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour (NPWS, 2016b).
Blackwater Estuary SPA (004028)	The Blackwater Estuary SPA is a moderately sized, sheltered south-facing estuary, which extends from Youghal New Bridge to the Ferry Point peninsula, close to where the river enters the sea. It comprises a section of the main channel of the River Blackwater to Ballynaclash Quay. At low tide, intertidal flats are exposed on both sides of the channel. On the eastern side the intertidal channel as far as Kinsalebeg and Moord Crossroads is included, while on the west side the site includes part of the estuary of the Tourig River as far as Kilmagner (NPWS, 2014c).
Ballymacoda Bay SPA (004023)	This coastal site stretches north-east from Ballymacoda to within several kilometres of Youghal, Co. Cork. It comprises the estuary of the Womanagh River, a substantial river which drains a large agricultural catchment. Part of the tidal section of the river is included in the site and on the seaward side the boundary extends to, and includes Bog Rock, Barrel Rocks and Black Rock. The inner part of the estuary is well sheltered by the Ring peninsula, a stabilised sand spit with sand dunes at its northern end and salt marshes on the landward side. Sediment types vary from muds to muddy sands in the inner part to fine rippled sands in the outer exposed part (NPWS, 2014d).
Ballycotton Bay SPA (004022)	Situated on the south coast of Co. Cork, Ballycotton Bay is an east-facing coastal complex, which stretches northwards from Ballycotton to Ballynamona, a distance of c. 2km. The site comprises two sheltered inlets which receive the flows of several small rivers. The southern inlet had formerly been lagoonal (Ballycotton Lake) but breaching of the shingle barrier in recent times has resulted in the area reverting to an estuarine system (NPWS, 2015c).
Cork Harbour SPA (004030)	Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poul nabibe inlets (NPWS, 2015d).

The AA Screening's objective is to determine on the basis of objective information, all available evidence and in consideration of the worst-case scenario, if it can be excluded as to whether it will result in likely significant effects on a European site, either alone or in combination with other plans or projects, in view of that site's COs.

5.5.1. Blackwater River (Cork/Waterford) SAC

This SAC is screened in for further assessment (see **Table 5.4**) due to hydrological connectivity via ex-situ species activity. The Proposed Development interacts with watercourses flowing into this European site and has hydrological and ecological connectivity to rivers in the wider area with records for Otter. Otter has a foraging range greater than the downstream hydrological distance between the Proposed Development and the European which is 3.5km. This places the receiving environment of the Proposed Development within the foraging range of ex-situ Otter (13.2km $\pm$ 5.3km, Reid *et al.*, 2013). Therefore, potential ex-situ connectivity is considered.

While the remaining species (Sea Lamprey *Petromyzon marinus*, Brook Lamprey *Lampetra planeri*, River Lamprey *Lampetra fluviatilis*, Twaite Shad *Alosa fallax fallax*, and Salmon *Salmo salar*) are not currently mapped within the Tourig river in proximity to the Proposed Development, due to the suitable river network upstream of the SAC via the Tourig, these species are considered for potential impacts on ex-situ individuals.

Table 5.4: Assessment of LSE for scoped-in Blackwater River (Cork/Waterford) SAC, with analysis per QI. Those highlighted in yellow are brought forward to NIS.

Effect	QIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Otter <i>Lutra lutra</i> [1355]	Based on field survey results, Otter is assumed to be present within the connected watercourses surrounding the Proposed Development. Due to its presence downstream of construction related works, and that the Proposed Development is within the foraging distance for Otter, there is potential for disturbance effects to occur. The construction phase may introduce disturbance (e.g. noise, vibration, water pollution, or habitat alteration) into connected watercourses, with potential downstream transfer to areas used by Otters. Otter's use of a wide landscape via connected rivers means they may experience disturbance or displacement downstream of work areas. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Pollution/ Contamination	<i>Salicornia</i> and other annuals colonising mud and sand [1310]	Both habitats are mapped within the NBDC grid square X08 and as such, may be present further upstream of the SAC. However, as no in-stream works will occur during the construction phase of the Proposed Development and given the dilution effect of 3.5km of hydrological separation between the Proposed Development and the SAC, any effects of surface run-off on the QI habitats would be negligible to low even under a worst-case scenario. Additionally, per field surveys conducted these habitats are not present within the immediate receiving environment of the Proposed Development. As such, no LSEs on these ex-situ QIs are anticipated and no further assessment is required.
	Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]	
	Sea Lamprey <i>Petromyzon marinus</i> [1095]	Based on their presence within the SAC and suitable river network upstream via the Tourig river, these species are assumed to be present within the connected watercourses surrounding the Proposed Development. Therefore, they are vulnerable to any waterborne contaminants arising from construction activities (e.g. hydrocarbons, silt, or chemical spills). Due to their presumed presence downstream of construction related works, there is potential for ex-situ contamination effects to occur. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
	Brook Lamprey <i>Lampetra planeri</i> [1096]	
	River Lamprey <i>Lampetra fluviatilis</i> [1099]	
	Twaite Shad <i>Alosa fallax fallax</i> [1103]	
	Salmon <i>Salmo salar</i> [1106]	
	Freshwater Pearl Mussel <i>Margaritifera margaritifera</i> [1029]	
	Otter <i>Lutra lutra</i> [1355]	Based on field survey results, Otter is assumed to be present within the connected watercourses surrounding the Proposed Development. Therefore, they are vulnerable to any waterborne contaminants arising from

		construction activities (e.g. hydrocarbons, silt, or chemical spills). Due to its presence downstream of construction related works, there is potential for ex-situ contamination effects to occur. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Spread of Invasive Species	Otter <i>Lutra lutra</i> [1355]	Based on field survey results, Otter is assumed to be present within the connected watercourses surrounding the Proposed Development. Therefore, they are vulnerable to any habitat loss or fragmentation due to the spread of invasive species. Due to its presence in proximity to construction related works, there is potential for spread of invasive species to occur. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Operational Phase		
Disturbance/ Displacement	Otter <i>Lutra lutra</i> [1355]	Based on field survey results, Otter is assumed to be present within the connected watercourses surrounding the Proposed Development. Due to its presence downstream of maintenance works, and that the Proposed Development is within the foraging distance for Otter, there is potential for disturbance effects to occur. The operational phase may introduce disturbance (e.g. noise, vibration, or human presence) into connected watercourses, with potential downstream transfer to areas used by Otters. Otter's use of a wide landscape via connected rivers means they may experience disturbance or displacement downstream of work areas. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.
Decommissioning Phase		
Disturbance/ Displacement	Otter <i>Lutra lutra</i> [1355]	Based on field survey results, Otter is assumed to be present within the connected watercourses surrounding the Proposed Development. Due to its presence downstream of construction related works, and that the Proposed Development is within the foraging distance for Otter, there is potential for disturbance effects to occur. The decommissioning phase may introduce disturbance (e.g. noise, vibration, water pollution, or habitat alteration) into connected watercourses, with potential downstream transfer to areas used by Otters. Otter's use of a wide landscape via connected rivers means they may experience disturbance or displacement downstream of work areas. As such, and in the absence of mitigation measures to avoid such occurrences, significant effects cannot be determined to be unlikely.

5.5.2. Blackwater Estuary SPA

This SPA is screened in for further assessment (see **Table 5.5**). Blackwater Estuary SPA is 3.5km from the Proposed Development. This SPA is located 2.09km from the nearest point for the Proposed Development, and 3.5km downstream of the Proposed Development via the Tourig river. This places the Proposed Development with the foraging range of each of the SCIs listed for this SPA. As no in-stream works will occur during the Proposed Development works, it is unlikely that significant effects on in-situ SCIs will occur as results of the Proposed Development. As such, only ex-situ effects on these SCIs pose potential for significant effects. Therefore, this site is considered for potential ex-situ effects.

Table 5.5: Assessment of LSE for scoped-in Blackwater Estuary SPA, with analysis per SCI. Those highlighted in yellow are brought forward to NIS.

Effect	SCIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Golden Plover <i>Pluvialis apricaria</i> [A140]	Golden Plover was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Golden Plover is 500m for breeding and non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Golden Plover are anticipated and no further assessment of this species is required.
	Lapwing <i>Vanellus vanellus</i> [A142]	Lapwing was not recorded onsite during bird surveys. The typical range of a Lapwing is within 1-2km of the nest while breeding, however, their sensitivity to disturbance is not fully known for non-breeding disturbance due to their large ranges during this period (Goodship and Furness, 2022). However, as there were no Lapwing recorded during I-WeBS surveys, negligible to low suitable habitat for Lapwing onsite, and ample higher quality habitat in the wider receiving environment, no LSEs on Lapwing are anticipated and no further assessment of this species is required.
	Dunlin <i>Calidris alpina</i> [A149]	Dunlin was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Dunlin is 200m for breeding and 300m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Dunlin are anticipated and no further assessment of this species is required.
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	Black-tailed Godwit was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Black-tailed Godwit is 200m for breeding and non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Black-tailed Godwit are anticipated and no further assessment of this species is required.

	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	Bar-tailed Godwit was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Bar-tailed Godwit is 300m for breeding and 650m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Bar-tailed Godwit are anticipated and no further assessment of this species is required.
	Curlew <i>Numenius arquata</i> [A160]	Curlew was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Curlew is 300m for breeding and 650m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Curlew are anticipated and no further assessment of this species is required.
	Redshank <i>Tringa totanus</i> [A162]	Redshank was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Redshank is 200m for breeding and 300m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Redshank are anticipated and no further assessment of this species is required.
	Wigeon <i>Mareca penelope</i> [A855]	Wigeon was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Wigeon is 200m for breeding and 500m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Wigeon are anticipated and no further assessment of this species is required.
Pollution/ Contamination	Golden Plover <i>Pluvialis apricaria</i> [A140]	As no in-stream works will occur during the construction phase of the Proposed Development and given the dilution effect of 3.5km of hydrological separation between the Proposed Development and the SAC, any effects of surface run-off on in-situ SCIs would be negligible to low even under a worst-case scenario. While the Proposed Development is within the foraging range of these SCIs, they were not observed foraging within the Proposed Development boundary during field surveys or within the watercourses connected to the Proposed Development. Although the Proposed Development is connected there is limited food sources available for them within the habitats for them to be considered ex-situ foraging areas. Higher quality foraging habitat is present in the wider receiving environment; therefore, these SCIs are not considered to be likely receptors for ex-situ pollution or contamination resulting from the Proposed Development. Therefore, no LSEs on SCIs are anticipated and no further assessment of this species is required.
	Lapwing <i>Vanellus vanellus</i> [A142]	
	Dunlin <i>Calidris alpina</i> [A149]	
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	
	Curlew <i>Numenius arquata</i> [A160]	
	Redshank <i>Tringa totanus</i> [A162]	
	Wigeon <i>Mareca penelope</i> [A855]	

Operational Phase		
Disturbance/ Displacement	Golden Plover <i>Pluvialis apricaria</i> [A140]	Golden Plover was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Golden Plover is 500m for breeding and non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Golden Plover are anticipated and no further assessment of this species is required.
	Lapwing <i>Vanellus vanellus</i> [A142]	Lapwing was not recorded onsite during bird surveys. The typical range of a Lapwing is within 1-2km of the nest while breeding, however, their sensitivity to disturbance is not fully known for non-breeding disturbance due to their large ranges during this period (Goodship and Furness, 2022). However, as there were no Lapwing recorded during I-WeBS surveys, negligible to low suitable habitat for Lapwing onsite, and ample higher quality habitat in the receiving environment, no LSEs on Lapwing are anticipated and no further assessment of this species is required.
	Dunlin <i>Calidris alpina</i> [A149]	Dunlin was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Dunlin is 200m for breeding and 300m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Dunlin are anticipated and no further assessment of this species is required.
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	Black-tailed Godwit was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Black-tailed Godwit is 200m for breeding and non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Black-tailed Godwit are anticipated and no further assessment of this species is required.
	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	Bar-tailed Godwit was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Bar-tailed Godwit is 300m for breeding and 650m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Bar-tailed Godwit are anticipated and no further assessment of this species is required.
	Curlew <i>Numenius arquata</i> [A160]	Curlew was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Curlew is 300m for breeding and 650m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Curlew are anticipated and no further assessment of this species is required.

	Redshank <i>Tringa totanus</i> [A162]	Redshank was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Redshank is 200m for breeding and 300m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Redshank are anticipated and no further assessment of this species is required.
	Wigeon <i>Mareca penelope</i> [A855]	Wigeon was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Wigeon is 200m for breeding and 500m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Wigeon are anticipated and no further assessment of this species is required.
Decommissioning Phase		
Disturbance/ Displacement	Golden Plover <i>Pluvialis apricaria</i> [A140]	Golden Plover was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Golden Plover is 500m for breeding and non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Golden Plover are anticipated and no further assessment of this species is required.
	Lapwing <i>Vanellus vanellus</i> [A142]	Lapwing was not recorded onsite during bird surveys. The typical range of a Lapwing is within 1-2km of the nest while breeding, however, their sensitivity to disturbance is not fully known for non-breeding disturbance due to their large ranges during this period (Goodship and Furness, 2022). However, as there were no Lapwing recorded during I-WeBS surveys, negligible to low suitable habitat for Lapwing onsite, and ample higher quality habitat in the receiving environment, no LSEs on Lapwing are anticipated and no further assessment of this species is required.
	Dunlin <i>Calidris alpina</i> [A149]	Dunlin was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Dunlin is 200m for breeding and 300m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Dunlin are anticipated and no further assessment of this species is required.
	Black-tailed Godwit <i>Limosa limosa</i> [A156]	Black-tailed Godwit was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Black-tailed Godwit is 200m for breeding and non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Black-tailed Godwit are anticipated and no further assessment of this species is required.

	Bar-tailed Godwit <i>Limosa lapponica</i> [A157]	Bar-tailed Godwit was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Bar-tailed Godwit is 300m for breeding and 650m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Bar-tailed Godwit are anticipated and no further assessment of this species is required.
	Curlew <i>Numenius arquata</i> [A160]	Curlew was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Curlew is 300m for breeding and 650m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Curlew are anticipated and no further assessment of this species is required.
	Redshank <i>Tringa totanus</i> [A162]	Redshank was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Redshank is 200m for breeding and 300m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Redshank are anticipated and no further assessment of this species is required.
	Wigeon <i>Mareca penelope</i> [A855]	Wigeon was not recorded onsite during bird surveys. The nearest point of the SPA is 2.09km from the Proposed Development, and the accepted disturbance distance for Wigeon is 200m for breeding and 500m for non-breeding individuals (Goodship & Furness, 2022). Therefore, no LSEs on Wigeon are anticipated and no further assessment of this species is required.

5.5.3. Ballymacoda Bay SPA

This SPA is screened in for further assessment (see **Table 5.6**). Ballymacoda Bay SPA is 6.28km from the Proposed Development. Although no direct hydrological downstream pathways are present, the COs for this SPA lists two SCIs, Black-headed Gull and Lesser Black-backed Gull, which have mean foraging ranges of 7km and 43.3km respectively. This places the Proposed Development within the foraging ranges of these SCIs under a worst-case scenario. As such, ex-situ effects for these SCIs have the potential for significant effects. Therefore, under the precautionary principle, this site is considered for potential ex-situ effects.

Table 5.6: Assessment of LSE for scoped-in Ballymacoda Bay SPA, with analysis per SCI. Those highlighted in yellow are brought forward to NIS.

Effect	SCIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	The Proposed Development is within the mean foraging ranges for both of these SCIs from this European site. However, as there is negligible to low foraging habitat for these SCIs onsite, in consideration of these SCIs having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on these SCIs are anticipated and no further assessment of these species is required.
	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	
Pollution/ Contamination	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	The Proposed Development is within the mean foraging ranges for both of these SCIs from this European site. However, as there is negligible to low foraging habitat for these SCIs onsite, in consideration of these SCIs having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on these SCIs are anticipated and no further assessment of these species is required.
	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	
Operational Phase		
Disturbance/ Displacement	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	The Proposed Development is within the mean foraging ranges for both of these SCIs from this European site. However, as there is negligible to low foraging habitat for these SCIs onsite, in consideration of these SCIs having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on these SCIs are anticipated and no further assessment of these species is required.
	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	
Decommissioning Phase		
Disturbance/ Displacement	Black-headed Gull <i>Chroicocephalus ridibundus</i> [A179]	The Proposed Development is within the mean foraging ranges for both of these SCIs from this European site. However, as there is negligible to low foraging habitat for these SCIs onsite, in consideration of

	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	these SCIs having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on these SCIs are anticipated and no further assessment of these species is required.
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5.5.4. Ballycotton Bay SPA

This SPA is screened in for further assessment (see **Table 5.7**). Ballycotton SPA is 13.08km away from the Proposed Development. Although no direct hydrological downstream pathways are present, the COs for this SPA lists Lesser Black-backed Gull as an SCI, which has a mean foraging range of 43.3km (Power *et al.*, 2021). This places the Proposed Development within the foraging range of this SCI under a worst-case scenario. As such, ex-situ effects for this SCI have the potential for significant effects. Therefore, under the precautionary principle, this site is considered for potential ex-situ effects.

Table 5.7: Assessment of LSE for scoped-in Ballycotton Bay SPA, with analysis per SCI. Those highlighted in yellow are brought forward to NIS.

Effect	SCIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.
Pollution/ Contamination	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.
Operational Phase		
Disturbance/ Displacement	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.

Decommissioning Phase		
Disturbance/ Displacement	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.

5.5.5. Cork Harbour SPA

This SPA is screened in for further assessment (see **Table 5.6**). Cork Harbour SPA is 16.04km from the Proposed Development. Although no direct hydrological downstream pathways are present, the COs for this SPA lists Lesser Black-backed Gull as an SCI, which has a mean foraging range of 43.3km (Power et al., 2021). This places the Proposed Development within the foraging range of this SCI under a worst-case scenario. As such, ex-situ effects for this SCI have the potential for significant effects. Therefore, under the precautionary principle, this site is considered for potential ex-situ effects.

Table 5.8: Assessment of LSE for scoped-in Cork Harbour SPA, with analysis per SCI. Those highlighted in yellow are brought forward to NIS.

Effect	SCIs [code]	Scoping of Effects
Construction Phase		
Disturbance/ Displacement	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.
Pollution/ Contamination	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.
Operational Phase		

Disturbance/ Displacement	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.
Decommissioning Phase		
Disturbance/ Displacement	Lesser Black-backed Gull <i>Larus fuscus</i> [A183]	The Proposed Development is within the mean foraging range for both of this SCI from this European site. However, as there is negligible to low foraging habitat for this SCI onsite, in consideration of this SCI having low to negligible sensitivity to construction related effects at foraging habitats and ample higher quality foraging habitats in the wider receiving environment, including Blackwater Estuary SPA, no LSEs on this SCI are anticipated and no further assessment of this species is required.

5.6. In-Combination Effects

Legislation, guidance, and case law (see **Section 1.1** and **Section 3.1**) requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the Proposed Development.

This section presents the list of other plans and projects that have the potential to cause cumulative effects together with the Proposed Development.

In brief, the list of other plans and projects was established from a desk study of relevant data sources completed in December 2025 for any new and relevant sites. Planning applications approved more than five years were excluded from the list. These are likely to have already been built or no longer being progressed. The list includes other projects within a 500m radius of the Proposed Development.

This list was further refined based on likely significant cumulative effects arising to biodiversity. Scoped-in plans included local biodiversity and development action plans. A summary of these scoped-in plans is shown below (**Section 5.6.1**).

Due to the scale of the Proposed Development, any plans or projects with potential for in-combination effects were screened-in for adverse in-combination effects under the precautionary principle. Two projects were screened in for assessment as having the potential to give rise to likely significant in-combination effects (**Table 5.9**).

A full assessment of in-combination effects for scoped-in projects is presented in **Section 5.6.2**.

5.6.1. Plans

5.6.1.1. Cork County Development Plan 2022-2028

This plan provides for the support of solar farm projects at appropriate locations, where such development does not have a negative impact on the surrounding environment, landscape, historic buildings, or local amenities. It also provides for the encouragement of the retention and integration of existing trees, hedgerows, woodland, and other features of high natural value within new developments.

“Establish an appropriate balance in the spatial distribution of future population growth, in line with this Core Strategy, so that Bandon, Fermoy, Kinsale, Macroom and Youghal can accelerate their rate of growth and achieve a critical mass of population to enable them to maximise their potential to attract new investment in employment, services and public transport.”

Although no in-combination effects are predicted specifically between the Proposed Development and this plan. Where local authority plans to develop the area for more employment, population, services, and public transport, specifically in the Youghal area, such plans will be consulted to verify no such works are planned to take place overlapping with the Proposed Developments' works. As such, no likely significant in-combination effect is anticipated.

5.6.1.2. Youghal Biodiversity Action Plan 2022-2027

This Biodiversity Action Plan sets considerations and actions for biodiversity including management of habitats such as grassland, woodland, hedgerows, treelines, and scrub. No specific objectives are expected to interact in-combination with the Proposed Development resulting in significant effects. As such, no likely significant effects are expected as a result of in-combination effects with this plan.

5.6.1.3. National Biodiversity Action Plan 2023-2030

This is a broad national action plan setting the overall objectives with focused measurable targets to be implemented with more local and regional specific actions within biodiversity action plans created by local authorities and other government related departments to create more specific actions in line with achievable measures for biodiversity restoration and rehabilitation.

The five core objectives are the following:

- Objective 1: Adopt a Whole-of-Government, Whole-of-Society Approach to Biodiversity;
- Objective 2: Meet Urgent Conservation and Restoration Needs;
- Objective 3: Secure Nature's Contribution to People;
- Objective 4: Enhance the Evidence base for Action on Biodiversity; and
- Objective 5: Strengthen Ireland's Contribution to International Biodiversity Initiatives.

No direct contradiction or in-combination effects are considered likely based on the nature of the Proposed Development and the objectives not directly referring to the status or management measures for any European sites within the relevant Zol.

5.6.2. Projects

A search was conducted of planning applications (projects) within the vicinity of the Proposed Development, using the Cork County Council planning portal map viewer⁹, Waterford County Council planning portal map viewer¹⁰, the Department of Housing, Planning and Local Government EIA portal map viewer¹¹ and an Coimisiún Pleanála Planning Map Search tool¹². The search was limited to the five-year period preceding the date of issue of this report and excluded retention applications (i.e. typically local-scale residential or commercial developments where an impact has already occurred), incomplete, withdrawn or refused applications. The relevant projects with potential for in-combination effects on European sites are detailed in **Table 5.9**.

Therefore, it is considered that likely in-combination effects can be anticipated from the Proposed Development with two other projects.

⁹ Available online at <https://corkcocoeur.maps.arcgis.com/> Accessed 2nd December 2025

¹⁰ Available online at <https://waterfordcouncil.ie/services/planning/online-planning-enquiries/> Accessed December 2025

¹¹ Available online at housinggovie.maps.arcgis.com/ Accessed December 2025

¹² Available online at www.pleanala.ie/h Accessed December 2025

Table 5.9: Relevant projects with potential for in-combination adverse effects to European sites.

Project	Planning/ Project Ref.	Nearest Distance to the Proposed Development	Description / Status (Commencement included if available)	Temporal Overlap with Proposed Development (Likely, Unlikely, No)	Scoped in/out for cumulative assessment
An Bord Pleanála and Cork County Council					
Turbine Delivery Route and Wind Farm Development (Lyrenacarriga Wind Farm, Co. Cork)	PA04.309121	1.19km (from Turbine Delivery Route works)	The proposed development, covering an area of approx. 724 hectares, straddles the administrative boundaries of Co. Waterford and Co. Cork. The development works and accommodation works on the turbine delivery route are within the townlands of Lyrenacarriga, Dunmoon South, Coolbeggan West, Propoge, Ballycondon Commons, Ballynatray Commons, Shanapollagh and Killea in Co. Waterford and Lyremountain, Lyre, Ballyanthony, Knockanarrig, Breeda, Rearour North and Rearour South in Co. Cork. The site is located approx. 5km to the south/south-east of Tallow Co. Waterford and c. 9 km to the north-west of Youghal in Co. Cork. Two clusters of turbines are proposed. The cluster in Waterford consists of 11 turbines (T1-T11) and that in Cork consists of 6 (T12-T17).	Likely	The NIS for the Wind Farm was reviewed. The NIS concluded that with the mitigation measures outlined, no residual adverse effects on European sites are anticipated. Considering predicted impacts and the adoption of prescribed mitigation measures for the project and the absence of major works for this project in proximity to the Proposed Development, no cumulative effects are considered likely to occur. Scoped out
Cork County Council					
Housing Development (David Lyons & Michelle Lyons, Cornaveigh, Park, Youghal, Co. Cork)	244643	Adjacent to the Proposed Development boundary	Permission to construct a new single storey residential extension to the rear of the existing dwelling along with all associated site works and services.	Likely	This project will involve construction works adjacent to the 33kV UGC connecting the substation to the south-east land parcel. This project's works and the Proposed Development works are in proximity to the Youghal Park stream, which is crossed by the UGC and adjacent

Project	Planning/ Project Ref.	Nearest Distance to the Proposed Development	Description / Status (Commencement included if available)	Temporal Overlap with Proposed Development (Likely, Unlikely, No)	Scoped in/out for cumulative assessment
					to this project. Due to the overlap of a potential source pathway and this project likely taking place at the same time as the Proposed Development, in-combination effects cannot be ruled out at this stage. Scoped in
Housing Development (Sinead Fitzgerald, Knocknagappagh, Killeagh, Co. Cork)	217270	Adjacent to the Proposed Development boundary	Refurbish and make alterations to existing derelict dwelling; the construction of a part single-storey, part two-storey extension to the north (rear) of the existing derelict dwelling house, domestic garage, new walls and gates at existing site entrance,	Likely	Interactions will occur between the Proposed Development and this project, however, no interactions between these two projects will contribute to source magnitude or pathways identified for European sites within the relevant Zol. Scoped out
Housing Development (Maeve & Geoff Gibbons, Cornaveigh, Youghal, Co. Cork)	215844	2.20m	Construction of dwelling house & effluent treatment system together with associated site works. (Previous planning reference number 16/4786)	Likely	Interactions will not occur between the Proposed Development and this project, as any interactions between these two projects will not contribute to source magnitude or pathways identified for European sites within the relevant Zol. Scoped out
Housing Development (Ray Bryan, Youghal Park, Youghal, Co. Cork)	244962	249.84m	Permission to construct cattle shed with slatted tank and ancillary.	Likely	This project is outside of the footprint for potential interaction with the Proposed Development. Due to the absence of source pathways identified for European

Project	Planning/ Project Ref.	Nearest Distance to the Proposed Development	Description / Status (Commencement included if available)	Temporal Overlap with Proposed Development (Likely, Unlikely, No)	Scoped in/out for cumulative assessment
					sites within the relevant Zol, no in - combination effects are considered likely to be significant. Scoped out
Housing Development (Declan Fitzgerald, Knocknagappagh, Killeagh, Co. Cork)	244647	340.46m	Permission to construct a new part single storey part 1.5 storey dwelling house, a detached domestic garage, an on-site wastewater treatment system, new bored water well, new entrance gate and piers at the existing site entrance and all associated ancillary works.	Likely	This project is located upstream of the Cariganass stream, via existing drainage pathways. Although minimal in nature, this project does interact with an identified pathway for the Proposed Development. As such, in combination effects cannot be ruled out at this stage. Scoped in
Housing Development (Brian O'Neill, Ballinvarrig Lower, Youghal, Co. Cork)	206261	381.63m	Construction of a dwelling, garage, wastewater treatment unit, polishing filter and associated site works.	Likely	Although overlapping with the Proposed Development construction phase, due to the separation distance and absence of shared pathways for potential receptors of European sites, LSEs as a result of in-combination effects are unlikely to occur. Scoped out
Housing Development (Niamh Fitzgerald, Knocknagappagh, Killeagh, Co. Cork)	216992	445.76m	Permission for a dwelling house, a domestic garage, an on-site sewage treatment system and all associated site development works.	Likely	Although overlapping with the Proposed Development construction phase, due to the separation distance and absence of shared pathways for potential receptors of European sites, LSEs as a result of in-combination effects are unlikely to occur.

Project	Planning/ Project Ref.	Nearest Distance to the Proposed Development	Description / Status (Commencement included if available)	Temporal Overlap with Proposed Development (Likely, Unlikely, No)	Scoped in/out for cumulative assessment
					Scoped out
Site entrance (Maurice Noel O' Mahony, Knocknagappagh, Killeagh, Co. Cork)	225709	460.34m	Construction of new agricultural entrance and associated site works.	Likely	Although overlapping with the Proposed Development construction phase, due to the separation distance, the small scale of this project's works, and absence of shared pathways for potential receptors of European sites, LSEs as a result of in-combination effects are unlikely to occur. Scoped out
None of the remaining projects within 2km of the Proposed Development were of a scale or nature to support risk for in-combination interactions. The remaining projects within 2km of the Proposed Development have been scoped out for cumulative assessment based on the intervening distance (>500m) and small-scale nature of these projects. No interactions are expected with the Proposed Development.					
Waterford City and County Council					
Housing Development (Kieran Cunningham & Isis Cooper, Castlemiles, Lackaroe (Youghal), Co Waterford)	20739	131.34m	Construction of a single storey dwelling, domestic garage, new roadside entrance, new wastewater treatment system and all associated site works.	Likely	While there is potential overlap between this project and the Proposed Development solar farm delivery route, as there are no road alterations anticipated to facilitate the delivery route, no in-combination effects are anticipated. Scoped out
Upgrade/installation works (National Broadband Ireland,	211006	581.29m	SECTION 254 LICENCE for 79 no. customer connection poles for upgrade/installation of Broadband Network (2021WD0534 / DA081).	Likely	Due to the small-scale nature of this project and the absence of shared source pathways with the Proposed

Project	Planning/ Project Ref.	Nearest Distance to the Proposed Development	Description / Status (Commencement included if available)	Temporal Overlap with Proposed Development (Likely, Unlikely, No)	Scoped in/out for cumulative assessment
Youghal, Co. Waterford)					Development, no in-combination effects are anticipated. Scoped out
Overground electronic communications infrastructure	21819	879.08m	The erection of overground electronic communications infrastructure and any associated physical infrastructure along public roads including: 1. The erection of new overground fibre optic cables on existing timber poles 2. The erection of new poles and associated fibre optic cables (2021WD0329)	Likely	Due to the small-scale nature of this project and the absence of shared source pathways with the Proposed Development, no in-combination effects are anticipated. Scoped out
Housing Development (Shane Barry, Newtown, Youghal, Co. Waterford)	22847	1.61km	For a dormer bungalow type dwelling house, new site entrance, wastewater treatment system & associated percolation area and all associated site works.	Unlikely	Scoped out for cumulative assessment based on the intervening distance and small-scale nature of this project, no in-combination effects are considered likely to occur. Scoped out
None of the remaining projects within 2km of the Proposed Development were of a scale or nature to support risk for in-combination interactions. The remaining projects within 2km of the Proposed Development have been scoped out for cumulative assessment based on the intervening distance (>500m) and small-scale nature of these projects. No interactions are expected with the Proposed Development.					

6. SCREENING CONCLUSIONS

Inis Environmental Consultants Ltd. has prepared this report to inform an AA screening to assess whether the Proposed Development individually or in combination with other plans or projects, and in view of best scientific knowledge, is likely to have a significant effect on any European sites.

The screening exercise was completed in compliance with the relevant European Commission guidance, national guidance, and case law. The potential impacts of the Proposed Development have been considered in the context of the European sites potentially affected, their QIs or SCIs, and their COs.

Through an assessment of the S-P-R model, which considered the Zol of effects from the Proposed Development and the potential in-combination effects with other plans or projects, the following findings were reported:

- The Proposed Development is not directly connected with, or necessary to, the management of any European site;
- The Proposed Development cannot be determined as unlikely to give rise to significant effects on the QIs of SACs, in view of best scientific knowledge and in view of the COs of the European sites concerned; and
- The Proposed Development is not likely to give rise to significant effects on the SCIs, in view of best scientific knowledge and in view of the COs of the European sites concerned.

On the basis of objective scientific information, and in completion of the report to inform Screening for AA in respect of the Proposed Development, it is the considered opinion of Inis Environmental Consultants Ltd. that in the absence of mitigation, likely significant effects on the receptors identified in **Table 5.4** in the Blackwater River (Cork/Waterford) SAC cannot be ruled out during the construction, operation and decommissioning phases of the Proposed Development. As a result, it is respectfully submitted that the Competent Authority carries out an AA in respect to the Proposed Development. To assist with the AA, relevant QIs, either individually or in-combination with other projects and plans are further assessed for possible adverse effects below within **the Stage 2 NIS**. See **Table 6.1** for a summary of the screening results.

Table 6.1: *Summary of impact assessment on European sites as a result of the Proposed Development.*

	Blackwater River (Cork/Waterford) SAC	Blackwater Estuary SPA	Ballymacoda Bay SPA	Ballycotton Bay SPA	Cork Harbour SPA
Disturbance and/or Displacement of Species	Yes (Several QIs ex-situ)	No	No	No	No
Pollution/Contamination	Yes (Several QIs ex-situ)	No	No	No	No
In-combination effects	No	No	No	No	No
Stage 2 AA required	Yes	No	No	No	No

7. STAGE 2: NATURA IMPACT STATEMENT (NIS)

The Stage 2 NIS of this AA report examines whether the Proposed Development has the potential to cause adverse effects on the integrity of any European sites through the impact pathways screened in during Stage 1, based on the S-P-R model, appraised in **Section 5.4** and further scoped in **Section 5.5**.

Sources for likely significant effects associated with each of the Proposed Development phases have been appraised and associated with different potential zones of influence. This Statement will specifically appraise the significance of any effects on the QIs of **Blackwater River (Cork/Waterford) SAC**, within each of these zones of influence identified in the stage 1 screening to be potentially affected and their associated COs.

7.1. NIS Methodology

This NIS has been prepared following the steps described below:

- Review and description of available data for the relevant European site(s) potentially affected as identified in the Screening Report;
- Identification and description of potential effects on the relevant European site(s) and their designated QIs/SCIs;
- Assessment of the likely significance of the effects and/or impacts identified on the relevant QIs/SCIs in view of their SSCOs;
- Description and characterisation of other projects or plans that in combination with the Development have the potential for having significant effects on the relevant QIs/SCIs in view of their SSCOs;
- Identification of appropriate mitigation measures to remove the likelihood of significant effects on any European site(s) and their QIs/SCIs; and
- Exclusion of sites where it can be objectively concluded that there will be no significant effects once mitigation measures are adhered to.

7.2. Sources and Pathways for Adverse Effects on Integrity

The Stage 1 Screening for LSE process, following the S-P-R model conceptualised for the Proposed Development construction phase (**Section 5.4**), identified several possible sources for LSEs on the QIs of Blackwater River (Cork/Waterford) SAC (see **Table 7.1**).

Table 7.1: Summary of sources and pathways giving rise to possible LSEs on QIs from the Proposed Development.

Site	Source	Pathway	Proposed Development Phase			LSEs
			Construction	Operational	Decommissioning	
Blackwater River (Cork/Waterford) SAC	Disturbance/ Disturbance	Air	Sea Lamprey, Brook Lamprey, River	Sea Lamprey, Brook Lamprey, River	Sea Lamprey, Brook Lamprey, River	The following potential likely significant effects were considered for the relevant QIs screened in for the Blackwater River (Cork/Waterford) SAC. Disturbance/displacement to ex-situ QIs; Contamination/Pollution.
	Pollution/Contamination	Hydrological	Lamprey, Twaite Shad, Salmon, Freshwater Pearl Mussel, Otter	Lamprey, Twaite Shad, Salmon, Freshwater Pearl Mussel, Otter	Lamprey, Twaite Shad, Salmon, Freshwater Pearl Mussel Otter	

7.3. European Site QIs/SCIs Potentially Affected by the Proposed Development

The likelihood of significant effects on the COs of the European site with connectivity to the Proposed Development has been considered with regards to construction, operation, and decommissioning phases of the Proposed Development. The QIs, their COs, and threats to those conditions for the relevant European sites are outlined in **Table 7.2**. Information is based on the Natura 2000 standard data form¹³.

Table 7.2: Conservation status key conditions and threats to relevant QIs/SCIs screened in for assessment.

Relevant QIs/SCIs	National Conservation Status (NPWS, 2019c)	Site-Level Status	Primary Pressures and Threats (Inside/Outside)	Distribution within Site Available
Blackwater River (Cork/Waterford) SAC				
Sea Lamprey <i>Petromyzon marinus</i>	Bad	Excellent*	No pressures or threats reported by Article 17 Reporting relating to this QI are relevant to this SAC based on the Natura 2000 Network standard data form.	Yes (NPWS, 2012; King <i>et al.</i> , 2004)
Brook Lamprey <i>Lampetra planeri</i>	Favourable	Excellent*	No pressures or threats reported by Article 12 Reporting relating to this site relevant to the Ex-situ area relevant for the Proposed Development.	Yes (King <i>et al.</i> , 2004)
River Lamprey <i>Lampetra fluviatilis</i>	Unknown	Good*	No pressures or threats reported by Article 12 Reporting relating to this site relevant to the Ex-situ area relevant for the Proposed Development.	Yes (NPWS, 2012; King <i>et al.</i> , 2004)
Twaite Shad <i>Alosa fallax fallax</i>	Bad	Good*	No pressures or threats reported by Article 12 Reporting relating to this site relevant to the Ex-situ area relevant for the Proposed Development.	Yes (King <i>et al.</i> , 2004)
Salmon <i>Salmo salar</i>	Inadequate	Good*	No pressures or threats reported by Article 12 Reporting relating to this site relevant to the Ex-situ area relevant for the Proposed Development.	Yes (Inland Fisheries Ireland, 2020)
Otter <i>Lutra lutra</i>	Favourable	Excellent*	No pressures or threats are reported by Article 17 Reports for this QI.	No

*available data is prior to the major fish kill events that impacted this SAC in 2025 (Inland Fisheries Ireland, 2025).

7.4. Assessment of Effects

Table 7.3 outlines the attributes and targets associated with the SSCOs for the relevant QIs as identified in the preceding section. The potential significant effects of the Proposed Development on these attributes and targets are assessed. The assessment outlined below does not consider the influence of mitigation measures on LSEs, which will be considered in **Section 10**.

¹³ Available online at [natura2000/expertviewer/](https://natura2000.expertviewer.eu/) Accessed **December 2025**

Table 7.3: Assessment of potential adverse effects on relevant European site integrity in the context of QI features and their COs during the construction, operation and decommissioning phases of the Proposed Development.

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
Blackwater River (Cork/Waterford) SAC						
Otter <i>Lutra lutra</i> [1355]	Distribution	No significant decline	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Air - direct (noise, vibration, light)	Disturbance to ex-situ Otter	Yes. Otter are noise and light sensitive, and highly mobile. Therefore, in the absence of mitigation, potential adverse effects are likely during the construction, operational and decommissioning phases (albeit magnitude is low). Mitigation measures are required.
					Ex-situ Otter habitat fragmentation	No. No habitat reduction or fragmentation will occur as there are no in-stream works proposed.
					Reduction or fragmentation in ex-situ Otter density	
			Operation (Noise, Vibration; Human presence; Movements of vehicles).	Spread of invasive species	Ex-situ Otter habitat fragmentation	Yes. Habitat reduction or fragmentation may occur if invasive Japanese Knotweed is spread as a result of the Proposed Development works during the construction, operational and decommissioning phases. Mitigation to be considered at the next stage of assessment. Mitigation measures are required.
				Surface water run-	Changes in key of indicators	Yes.

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Extent of terrestrial habitat	No significant decline. Area mapped and calculated as 103ha above high-water mark (HWM); 1165.7ha along riverbanks/around ponds	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Noise, Vibration; Human presence; Movements of vehicles).	off (pollution/contamination)	conservation status value for ex-situ Otter (water quality)	There are potential effects on ex-situ distribution within waterbodies upstream of this designated site as a result of the construction phase. Mitigation measures are required.
				Air (Light and noise impacts)	Disturbance to ex-situ Otter	No. LSEs pose no threat to mapped terrestrial habitats based on the CO documentation within the SAC.
					Ex-situ Otter habitat fragmentation	No. No loss of habitats will occur.
					Reduction or fragmentation in ex-situ Otter density	
				Spread of invasive species	Ex-situ Otter habitat fragmentation	Yes. Terrestrial habitat reduction or fragmentation may occur if invasive Japanese Knotweed is spread as a result of the Proposed Development works during the construction, operational and decommissioning phases. Mitigation measures are required.
				Surface water run-off (pollution/	Changes in key indicators of conservation status value for ex-situ	No. Run-off affects water quality/prey and is assessed under the water-quality/fish biomass or freshwater habitat attributes—not “Extent of terrestrial

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Extent of marine habitat	No significant decline. Area mapped and calculated as 647.2ha	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills). Operation (Noise, Vibration; Human presence; Movements of vehicles).	contamination)	Otter (water quality)	habitat,” which concerns the area of riparian habitat rather than its aquatic quality.
				Air (Light and noise impacts)	Disturbance to ex-situ Otter	No. LSEs pose no threat to mapped marine habitats based on the CO documentation within the SAC.
					Ex-situ Otter habitat fragmentation	No. No loss of habitats will occur.
					Reduction or fragmentation in ex-situ Otter density	
				Spread of invasive species	Ex-situ Otter habitat fragmentation	No. Potential effects on Otter habitat within waterbodies upstream of this designated site.
				Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Otter (water quality)	No. Run-off affects water quality/prey and is assessed under the water-quality/fish biomass or freshwater habitat attributes—not “Extent of marine habitat,” which concerns the area of riparian habitat rather than its aquatic quality.

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Extent of freshwater (river) habitat	No significant decline. Length mapped and calculated as 599.54km	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Air (Light and noise impacts)	Disturbance to ex- situ Otter	Yes. Otter are noise and light sensitive, and highly mobile. Therefore, in the absence of mitigation, potential adverse effects are likely during the construction, operational and decommissioning phases (albeit likelihood is low). Mitigation measures are required.
					Ex-situ Otter habitat fragmentation	No. No loss of habitat will occur.
					Reduction or fragmentation in ex-situ Otter density	
			Operation (Noise, Vibration; Human presence; Movements of vehicles).	Spread of invasive species	Ex-situ Otter habitat fragmentation	Yes. River habitat reduction or fragmentation may occur if invasive Japanese Knotweed is spread as a result of the Proposed Development works during the construction, operational and decommissioning phases. Mitigation measures are required.
					Changes in key indicators of conservation status value for ex-situ Otter (water quality)	No. Run-off affects water quality/prey and is assessed under the water-quality/fish biomass or freshwater habitat attributes—not “Extent of river habitat,” which concerns the area of
				Surface water run- off (pollution/ contamina- tion)		

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
						riparian habitat rather than its aquatic quality.
	Extent of freshwater (lake) habitat	No significant decline. Area mapped and calculated as 25.06ha	No sources are tied to this attribute.	Air (Light and noise impacts)	Disturbance to ex-situ Otter	No. No lake habitats will be impacts by the identified LSEs.
					Ex-situ Otter habitat fragmentation	
					Reduction or fragmentation in ex-situ Otter density	
	Couching sites and holts	No significant decline	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental	Spread of invasive species	Ex-situ Otter habitat fragmentation	No. No couching habitats exists within 150m of the Proposed Development works.
					Changes in key indicators of conservation status value for ex-situ Otter (water quality)	
					Surface water run-off (pollution/contamination)	
				Air (Light and noise impacts)	Disturbance to ex-situ Otter	No. No couching habitats exists within 150m of the Proposed Development works.
					Ex-situ Otter habitat fragmentation	
					Reduction or fragmentation in	

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
			hydrocarbon spills).		ex-situ Otter density	
			Operation (Noise, Vibration; Human presence; Movements of vehicles).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Otter (water quality)	
	Fish biomass available	No significant decline	Construction (Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Otter (water quality)	Yes. Potential effects of moderate magnitude on ex-situ distribution within waterbodies upstream of this designated site and potential to depress local prey availability via turbidity and hydrocarbons during the construction phase. Mitigation measures are required.
	Barriers to connectivity	No significant increase	Construction (Noise, Vibration; Human presence; Movements of vehicles; Construction works; Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Air (Light and noise impacts)	Disturbance to ex-situ Otter	No. No instream works are proposed as part of the Proposed Development. Therefore, it is not likely the Proposed Development will introduce barriers to connectivity within the river network.
			Operation (Noise, Vibration; Human presence; Movements of vehicles).		Ex-situ Otter habitat fragmentation	No.

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
					Reduction or fragmentation in ex-situ Otter density	No habitat reduction or fragmentation will occur.
				Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Otter (water quality)	No. No instream works are proposed as part of the Proposed Development. Therefore, it is not likely the Proposed Development will introduce barriers to connectivity within the river network.
Sea Lamprey <i>Petromyzon marinus</i> [1095]	Distribution: extent anadromy	Greater than 75% of main stem length of rivers accessible from estuary	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Sea Lamprey (water quality)	No. No instream works are proposed as part of the Proposed Development. Therefore, neither the construction nor operation phase of the Proposed Development will impact the accessibility of the river network.
	Population structure of juveniles	At least three age/size groups present	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Sea Lamprey (water quality)	No. The mapped distribution of Sea Lamprey juveniles and spawning sites does not indicate presence of either in the Tourig river (King <i>et al.</i> , 2004)
	Juvenile density in fine sediment	Juvenile density at least 1/m ²	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Sea Lamprey (water quality)	

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
	Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds.	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Sea Lamprey (water quality)	
	Availability of juvenile habitat	More than 50% of sample sites positive	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Sea Lamprey (water quality)	
Brook Lamprey <i>Lampetra planeri</i> [1096]	Distribution	Access to all water courses down to first order streams	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Brook Lamprey (water quality)	No. No instream works are proposed as part of the Proposed Development. Therefore, neither the construction nor operation phase of the Proposed Development will impact the accessibility of the river network.
	Population structure of juveniles	At least three age/size groups of Brook/River Lamprey present	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Brook Lamprey (water quality)	No. The mapped distribution of Brook Lamprey juveniles and spawning sites does not indicate presence of either in the Tourig river (King <i>et al.</i> , 2004).
	Juvenile density in fine sediment	Mean catchments juvenile density of Brook/River	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ	

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
		Lamprey at least 2/m ²		contamination)	Brook Lamprey (water quality)	
	Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Brook Lamprey (water quality)	
	Availability of juvenile habitat	More than 50% of sample sides positive	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Brook Lamprey (water quality)	
River Lamprey <i>Lampetra fluviatilis</i> [1099]	Distribution	Access to all water courses down to first order streams	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ River Lamprey (water quality)	No. No instream works are proposed as part of the Proposed Development. Therefore, neither the construction nor operation phase of the Proposed Development will impact the accessibility of the river network.
	Population structure of juveniles	At least three age/size groups of Brook/River Lamprey present	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ River Lamprey (water quality)	No. The mapped distribution of River Lamprey juveniles and spawning sites does not indicate presence of either in the Tourig river (King <i>et al.</i> , 2004).
	Juvenile density in fine sediment	Mean catchments juvenile	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off	Changes in key indicators of conservation status	

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
		density of Brook/River Lamprey at least 2/m ²	gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	(pollution/contamination)	value for ex-situ River Lamprey (water quality)	
	Extent and distribution of spawning habitat	No decline in extent and distribution of spawning beds	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ River Lamprey (water quality)	
	Availability of juvenile habitat	More than 50% of sample sides positive	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ River Lamprey (water quality)	
Twaite Shad <i>Alosa fallax fallax</i> [1103]	Distribution: extent of anadromy	Greater than 75% of main stem lengths of rivers accessible from estuary	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Twaite Shad (water quality)	No. No instream works are proposed as part of the Proposed Development. Therefore, it is not likely the Proposed Development will impact the accessibility of the river network or the quality of the water.
	Water quality: oxygen levels	No lower than 5mg/l	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Twaite Shad (water quality)	No. In-situ water quality will not be affected by LSEs identified from the Proposed Development. Any change in water quality within the Tourig sub-basin ex-situ of the SAC will be low magnitude in nature and pose limited changes to water quality within the Tourig river. As

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
						such, LSEs on this QI ex-situ of the SAC are not likely to be adverse effects.
	Population structure: age classes	More than one age class	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Twaite Shad (water quality)	No. King <i>et al.</i> (2004) indicates that the Tourig river provides no riparian habitat of value for spawning of Twaite Shad, as such ex-situ spawning habitat is not likely to experience adverse effects as a result of the Proposed Development. Additionally, population structure will not be impacted given the absence of spawning habitat within the Tourig river.
	Extent and distribution of spawning habitat	No decline in extent and distribution of spawning habitats	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Twaite Shad (water quality)	
	Spawning habitat quality: Filamentous algae; macrophytes; sediment	Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plant) growth	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Twaite Shad (water quality)	
Salmon <i>Salmo salar</i> [1106]	Distribution: extent of anadromy	100% of river channels down to	Construction: Earthworks (e.g. digging); Use of contaminants (e.g.	Surface water run-off	Changes in key indicators of conservation status	No. No instream works are proposed as part of the Proposed Development.

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
		second order accessible from estuary	gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	(pollution/contamination)	value for ex-situ Salmon (water quality)	Therefore, it is not likely the Proposed Development will impact the accessibility of the river network or the quality of the water.
	Water quality	At least Q4 at all sites sampled by EPA	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Salmon (water quality)	
	Adult spawning fish	Conservation Limit (CL) for each system consistently exceeded	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Salmon (water quality)	No. The mapped distribution of Salmon does not indicate presence of juveniles in the Tourig river (Inland Fisheries Ireland, 2020).
	Salmon fry abundance	Maintain or exceed 0+ fry mean catchment-wide abundance threshold. Currently set at 17 salmon fry/5 min sampling	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run-off (pollution/contamination)	Changes in key indicators of conservation status value for ex-situ Salmon (water quality)	
	Out-migrating smolt abundance	No significant decline	Construction: Earthworks (e.g. digging); Use of contaminants (e.g.	Surface water run-off	Changes in key indicators of conservation status	

Receptor [Code]	Attribute CO	Target	Source (for each phase)	Relevant Pathways	Potential Impacts	Potential for Adverse Effects on Site Integrity
			gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	(pollution/ contamina tion)	value for ex-situ Salmon (water quality)	
	Number and distribution of redds	No decline in number and distribution of spawning redds due to anthropogenic causes	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run- off (pollution/ contamina tion)	Changes in key indicators of conservation status value for ex-situ Salmon (water quality)	
Freshwater Pearl Mussel <i>Margaritifera margaritifera</i> [1029]	Host fish	Maintain sufficient juvenile salmonids to host glochidial larvae	Construction: Earthworks (e.g. digging); Use of contaminants (e.g. gravel, hydrocarbons, spoil); and Accidental hydrocarbon spills).	Surface water run- off (pollution/ contamina tion)	Changes in key indicators of conservation status value for ex-situ Salmon (water quality)	No. The mapped distribution of Salmon does not indicate presence of the species in the Tourig river (Inland Fisheries Ireland, 2020). As such, the Proposed Development is not likely to have adverse effects on the host fish for Freshwater Pearl Mussel.

7.4.1. Summary of Assessment of Adverse Effects

7.4.1.1. Assessment of Adverse effects related to Construction Phase sources

- Blackwater River (Cork/Waterford) SAC (Otter) – As identified in **Table 7.3**, on a precautionary basis, there will be potential for indirect effects on the identified QI – Otter. Therefore, in the absence of mitigation there exists the potential for adverse effects to the integrity of the Blackwater River (Cork/Waterford) SAC, via contamination (run-off/hydrocarbons depressing fish biomass/water quality), spread of invasive species and disturbance (noise, vibration, human presence). **Mitigation measures are therefore required** to ensure no adverse impacts occur as a result of the Proposed Development and these are set out in **Section 9** of this document; and
- The remaining QIs LSEs of the Blackwater River (Cork/Waterford) SAC are not considered likely to experience adverse effects during operation;
 - *Salicornia* and other annuals colonising mud and sand;
 - Mediterranean salt meadows (*Juncetalia maritimi*);
 - Sea Lamprey;
 - Brook Lamprey;
 - River Lamprey;
 - Twait Shad;
 - Salmon; and
 - Freshwater Pearl Mussel.

7.4.1.2. Assessment of Adverse effects related to Operational Phase Sources

- Blackwater River (Cork/Waterford) SAC (Otter) – As identified in **Table 7.3**, on a precautionary basis, there will be potential for indirect effects on the identified QI – Otter. Therefore, in the absence of mitigation there exists the potential for adverse effects to the integrity of the Blackwater River (Cork/Waterford) SAC, via disturbance (noise, vibration, human presence). **Mitigation is therefore required** to ensure no adverse impacts occur as a result of the Proposed Development and these are set out in **Section 9** of this document,
- The remaining QIs of the Blackwater River SAC are not considered likely to experience significant or adverse effects during operation phase;
 - *Salicornia* and other annuals colonising mud and sand;
 - Mediterranean salt meadows (*Juncetalia maritimi*);
 - Sea Lamprey;
 - Brook Lamprey;
 - River Lamprey;
 - Twait Shad;
 - Salmon; and
 - Freshwater Pearl Mussel.

7.4.1.3. Assessment of Adverse effects related to Decommissioning Phase Sources

- Blackwater River (Cork/Waterford) SAC (Otter) – As identified in **Table 7.3**, on a precautionary basis, there will be potential for indirect effects on the identified QI – Otter. Therefore, in the absence of mitigation there exists the potential for adverse effects to the integrity of the Blackwater River (Cork/Waterford) SAC, via disturbance (noise, vibration, human presence). **Mitigation is therefore required** to ensure no adverse impacts occur as a result of the Proposed Development and these are set out in **Section 9** of this document,
- The remaining QIs of the Blackwater River SAC are not considered likely to experience significant or adverse effects during decommissioning phase;
 - *Salicornia* and other annuals colonising mud and sand;
 - Mediterranean salt meadows (*Juncetalia maritimi*);
 - Sea Lamprey;
 - Brook Lamprey;
 - River Lamprey;
 - Twait Shad;
 - Salmon; and
 - Freshwater Pearl Mussel.

8. IN-COMBINATION EFFECTS

Legislation, guidance, and case law (see **Section 1.1** and **Section 3.1**) requires that in-combination effects with other plans or projects are considered. On this basis, a range of other plans and projects were considered in terms of their potential to have in-combination effects with the Proposed Development in Stage 1 of the AA (see **Table 5.7**)

Two projects were identified to have potential for likely significant in-combination effects with the Proposed Development.

8.1. Projects

Two projects (Cork County Council Planning Ref: 244643, 244647) have possible in-combination effects in the form of reduction of water quality to the Youghal Park stream and the Carriganass stream respectively, having potential for adverse effects on the ex-situ QIs of the Blackwater River (Cork/Waterford) SAC. Due to the nature of the works for these two projects, effects related to disturbance/displacement or mortality are not considered likely to occur with in-combination interactions with the Proposed Development. As such, only contamination in-combination effects are assessed below.

8.1.1. Contamination

8.1.1.1. Housing Development (244643)

This project will involve construction works on an isolated dwelling adjacent to the 33kV UGC route just east of the Youghal Park stream culvert crossing works. Assuming worst-case scenario interactions from the Proposed Development and this project, any contamination effect into Youghal Park would be of negligible to low magnitude. This is based on the elevations related to the culvert crossing works and the extent of vegetation overgrowth along this watercourse. As such, given the separation distance from this potential source point (Youghal Park stream) and this project (20m), there is potential for source pathway interactions downstream to the nearest European site (Blackwater River (Cork/Waterford) SAC). In consideration of ex-situ mobile QIs and SCIs of the European sites, adverse effects are not considered likely to occur given the existing dilution factors for contamination to impact habitats further downstream and the unsuitable condition of this watercourse for the mobile QIs due to the extent of vegetation overgrowth. **Mitigation measures are not required to offset in-combination effects from this project as adverse effects are unlikely to occur.**

8.1.1.2. Housing Development (244647)

This project has potential source pathway interactions with the Carriganass stream via existing agricultural drainage ditches between this project boundary and this waterbody. Given the extent of potential sediment runoff with watercourses upstream of the confluence with the Carriganass stream, there is potential for this project to contribute to the magnitude, duration and/or nature of the adverse effects from the Proposed Development, as identified in **Section 7.4.1**. Although this projects duration and scale is not likely to on its own contribute to significant effects on European sites, due to the likely adverse effects identified for the Proposed Development, appropriate mitigation measures

are required to offset cumulative interactions with the shared source pathway. **Mitigation measures are required to offset in-combination effects from this project as adverse effects are likely to occur.**

9. MITIGATION

The objective of mitigation measures is to avoid, minimise and control contaminated run off entering land drains and local watercourses and to the European site that is hydrologically linked to the Proposed Development.

Discussion on water quality and the required mitigation measures are detailed in **the accompanying EclA** for the Construction, Operation and Decommissioning phases of the Proposed Development. The mitigation measures outlined follow best practice techniques, are site specific and are proven to work. When implemented the proposed mitigation measures will be monitored to ensure their effectiveness.

Mitigation requirements:

- Otter (Blackwater River (Cork/Waterford) SAC, ex-situ) – disturbance; prey reduction via water quality; spread of invasive species.

All other screened receptors: no mitigation measures required.

9.1. Construction Phase

All construction works will fully comply with best practice/industry standards such as the Construction Industry Research and Information Association (CIRIA) and UK Pollution Prevention Guidelines, in respect of the protection of Water Quality, the reduction of emissions and the prevention of noise. As such, all works will comply with CIRIA standards as follows:

- CIRIA Report C502 Environmental Good Practice on Site;
- CIRIA Report C532 Control of Water Pollution from Construction Sites;
- CIRIA Report C648 Control of Pollution from Linear Construction Project; Technical Guidance;
- CIRIA Handbook C650 Environmental good practice onsite;
- CIRIA Handbook C651 Environmental good practice onsite checklist;
- CIRIA Report C609 – SuDS – hydraulic, structural & water quality advice; and
- CIRIA Report C697 – The SuDS Manual.

Pollution Prevention Guidance Notes (PPGs):

- PPG01 General guide to the prevention of water pollution;
- PPG02 Above ground oil storage tanks;
- PPG05 Works in near or liable to affect watercourses;
- PPG06 Working at construction and demolition sites;
- PPG07 Refuelling Facilities;
- PPG11 Preventing pollution at industrial sites;
- PPG18 Control of spillages and firefighting run-off;
- PPG20 Dewatering underground ducts and chambers;
- PPG21 Pollution Incident Response Planning;
- PPG23 Maintenance of Structures over Water; and

- PPG26 Pollution Prevention Storage and Handling of Drums & Intermediate Bulk Containers.

9.1.1. General Management

- An Ecological Clerk of Works (ECoW) will be employed by the appointed contractor to oversee construction works and monitor and prevent the occurrence of any source of likely significant effects identified in **Section 7.4**. Particular attention will be devoted to prevention of unregulated waste disposal and contaminant spillages onsite, monitoring of excavations, abutment foundations etc. The duties and responsibilities of the ECoW will include:
 - Monitor the implementation of the CEMP, carry out site inspections and audits to ensure the works are carried out in compliance with the CEMP;
 - Keep site records to demonstrate compliance with the CEMP, the Planning Permission and other statutory requirements;
 - Attend design team meetings, site meetings and other stakeholder meetings as required to ensure environmental compliance;
 - Advise site management and contractors on items such as:
 - Prevention of environmental pollution;
 - Lights are to be used with the following guidance from Dark Sky Ireland during night time hours and that every light needs to be justifiable, limit the use of light to when it is needed, direct the light to where it is needed, reduce the light intensity to the minimum needed, use light spectra adapted to the environment, when using white light, use sources with a “warm” colour temperature (less than 3000K);
 - Implementation of planning conditions linked to environmental and ecological sensitives and implementation of statutory requirements linked to environmental controls;
 - Suitability and use of plant, equipment and materials to prevent pollution; and
 - Environmentally sound methods and systems of working to prevent environmental hazards.
 - Ensure agreed mitigation measures are initiated, implemented and maintained throughout the construction phase and where required during the operational phase;
 - Liaise with Project Archaeologist, Hydrologist and Geotechnical Engineer and ensure their regular site visits and audits / inspections are completed;
 - Ensure adequate emergency response procedures are put in place for potential environmental hazards;
 - Ensure that details of environmental incidents are communicated in a timely manner to the relevant regulatory authorities;
 - Investigate incidents of significance and ensure corrective actions are carried out;
 - Identify environmental training requirements and arrange relevant training for all levels of site-based personnel.; and
 - Put communication protocols in place to ensure that all personnel on site are made aware that they are responsible for ensuring good construction and environmental practice and that they are encouraged to provide feedback and suggestions for improvements.
- All site contractors will be briefed regarding the biodiversity value of the surrounding landscape, including adjacent habitats and its sensitivities, the designated species (QIs and

SCIs), and designated habitats that can potentially occur in proximity of the Proposed Development. The briefing should also raise awareness to biosecurity and environmentally damaging actions conducted during the project construction that could result in irreversible damage to sensitive receptors related to European sites, including the sources identified in **Section 7.4**, and that such matters often arise accidentally through lack of awareness, rather than as a result of an intentional action; and

- The appointed contractor will ensure that all personnel working onsite are trained in pollution incident control response. A regular review of weather forecasts of heavy rainfall is required, and the Contractor will be required to prepare a contingency plan for before and after such events.

9.1.2. Mitigation for Displacement/Disturbance

Mitigation is required to avoid adverse effects on a QI (Otter) of Blackwater River (Cork/Waterford) SAC arising from visual and noise disturbance.

A full spectrum of surveys in line with Reid *et al.* (2013) and Highways Agency (1999) recommendations to identify the extent of Otter presence utilising the habitat within the Proposed Development site boundary will be conducted prior to any works commencing. Should an active holt be found within the 150m distance of the works (NRA, 2006), no works will take place until the holt has been confirmed vacant. Consultation will be conducted with NPWS and if required works will either wait for the holt to no longer be in use or derogation license to relocate the holt will be sought with appropriate measures in line with the Wildlife Acts and the EU habitats Directive. Should this derogation license be required, this effect will be re-assessed to address the changes to adverse effects on Otter. The creation of shelter for Otter via an artificial holt on the Tourig River will be actioned as part of the BEMP once construction works are completed. Wildlife gates will be provided within stock proof fencing to avoid fragmentation within the site boundary.

Construction traffic within the Proposed Development will follow the measures described with the Traffic Management Plan. This includes a speed restriction on internal access tracks of 25kmh.

9.1.3. Mitigation for Contamination

Mitigation to avoid adverse effects on a QI (Otter) of Blackwater River (Cork/Waterford) SAC has been identified as a requirement to prevent contamination related effects on the connected watercourses. Appropriate mitigation measures are described below.

9.1.3.1. Site-Specific Surface Water Management

The Site Access Tracks will be built by excavating to a stable layer and filling with selected materials. Since these tracks often create a flow path for surface water and are usually lower than adjacent existing ground levels, specific drainage designs will be used (refer to **Surface Water Management Plan**). These designs include:

The drainage system includes the following:

- Drainage will be installed in parallel with access track construction;
- Swales and Check dams will be mainly used for linear track drainage;

- Silt fencing will be utilised during water crossings and around stockpiles; and
- Settlement-attenuation ponds will be used at every major excavation (Substation and BESS).

The approach to treatment and attenuation of storm water is as follows:

- Additional drainage measures will only be added as necessary. The dimensions of these features will avoid intercepting large volumes of water;
- Where linear track drains are specified on the drainage stone filled check dams will be installed at a regular frequency, in order to reduce flow velocities and improve conditions for the settlement of solids in transit. It is intended that these dams will provide treatment of construction runoff at source. There will be outflow points (spillways) from the drains to the settlement ponds. No outflow will be permitted directly into natural water courses;
- The roads within the Proposed Development will be constructed with an appropriate surface cross slope, so that all storm water flow will be directed towards the constructed swales located along road verges or to French drains/soakaways. The width and depth of constructed swales will be minimised as far as practical in order to reduce ground disturbance, excavation footprint (and hence volume of excavated materials) and also disruption of local hydrology as far as possible;
- Drainage vegetation including grasses established within a drainage channel can filter runoff water. Living and decomposing plants and roots and associated microorganisms trap sediments and take up excess nutrients used, will be similar in species to the local area and will be approved by the ECoW;
- Permanent check dams will be installed at regular intervals within the swales in order to reduce erosion and allow for greater flow control;
- Stormwater runoff within the trackside drainage will be treated through the provision of check dams, within a range depending on local slope of the drain as significant levels of sediment are not expected because of the surface dressing of the access tracks. All trackside drainage will drain to settlement-attenuation ponds;
- The maximum spacing between check dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam;
- The centre of the check dam should be at least 0.2m lower than the outside edges;
- Side slopes should be 1:2 or less;
- A Terram membrane barrier or similar non-woven geotextile membrane will be placed around check dam;
- Check dams will be keyed at least 0.1m into the drainage channel bottom in order to prevent the dam washing out;
- Check dams will be maintained and monitored on a regular basis. Sediment will be removed before it reaches one half the original dam height;
- Discharging directly back into the surrounding area will assist in maintaining the hydrological characteristics of the Proposed Development;
- Where vegetation is removed from sloped areas during construction, these areas will be reinstated as early as possible using the same vegetation or similar vegetation as advised by the ECoW;

- A sump may be required for trench dewatering. Water will subsequently be pumped into settlement-attenuation ponds or a silt buster; and
- The level of silt runoff during construction will be monitored and if found to be excessive of 25 mg/L in any area, will subsequently be managed by the provision of additional silt attenuation features such as silt fences or silt traps.

French drains comprising 0.4m wide trenches up to 900mm deep will be filled with 32mm single sized crushed stone. These will be provided along edges of new tracks where no swales are proposed and also within localised hollows where surface water would otherwise accumulate and will connect such hollows to the road drainage.

Soakaways will be provided at the following locations:

- Site entrances;
- Substation; and
- Inverter/transformer stations.

At site entrances, the soakaway will comprise 1.8m diameter perforated precast concrete manhole rings to at least 1.2m deep filled with single 32mm sized crushed stone.

During operation, the Proposed Development will have interceptor drains for all entrances prevent surface water from discharging into the public road.

At the substation, a soakaway of 5m x 5m x 1.8m is proposed.

For the inverter (transformer/hardstand areas, a soakaway trench 0.6m wide x 8.0m long, 1.2m deep and filled with 32mm single sized crushed stone is proposed at the end of each unit.

9.1.3.2. Site Specific Fine Sediment Pollution Management:

Silt fences will be installed (to manufacturers' recommendations) in a range of scenarios, including;

- Alongside any sensitive areas, e.g. watercourses, particularly where work occurs within drainage or surface water buffers. This can include dirty water containment at watercourse crossings;
- Large areas of stripped materials i.e. soils and subsoils, and areas used for temporary storage of materials, e.g. around the substation and BESS cut and fill construction area;
- Downstream from drainage or water treatment outlets, and can usually be arranged in a horse-shoe style configuration to contain and allow settlement of suspended sediments;
- Within temporary construction drains, alongside or in place of check dams;
- Drainage Swales will be provided between the Proposed Development and watercourses. Drainage from site roads, compounds, inverter stations and other hardstand areas will be collected by these drainage swales and attenuated to greenfield equivalent in three-compartment silt ponds (which are also designed for attenuation) and dispersed overland via a "level spreader" or buffered outfalls where the outflow will mimic existing natural overland sheet flow;

- Settlement ponds are to be securely fenced to prevent easy access. The ponds are utilised to attenuate and to aid the removal of suspended solids from site runoff water. Settlement ponds will be emplaced at 46 locations along the drainage footprint; and
- Flows controls shall be installed at the silt pond outflow points to ensure that flows are discharged at a limited rate up to the 1% AEP Climate Change event.

9.1.3.3. Accidental Spills and Leaks Control Measures

An Emergency Response Plan has been prepared for the Proposed Development and is attached to the CEMP as **Appendix F**.

Prior to commencement of construction, the Environmental Clerk of Works (ECoW) will prepare a register of corrective action and emergency response sub-contractors that can be called upon in the event of an environmental incident, and/or to give training on escalating incidents where useful, including e.g. specialist hydrocarbon spill response, specialist hydrological and/or water quality response.

Mitigation measures as outlined in the previous sections will reduce the potential for contamination of waters during the construction phase of the Proposed Development. However, there remains the risk of accidental spillages and or leaks of contaminants, and excessive loading of surface water mitigation infrastructure.

The Emergency Response Plan sets out the requirements with respect to the following:

- Managing & Reporting Environmental Incidents;
- Roles and Responsibilities;
- Spill Kits;
- Fire Prevention;
- Extreme Weather;
- Emergency Contacts;
- Incident Reporting and Investigation; and
- Incident Response.

The Emergency Response Plan is to be considered a live document which is to be updated on a regular basis by the Site Manager.

9.1.3.4. In-Combination Effect Mitigation

Construction works and operation works involving water courses or works within 20m of watercourses including all measures prescribed above for contamination management will be conducted outside the construction phase for the Housing Development project (244647). This project will only require 18-24 months to complete. This will ensure that any potential contamination from this project will not interact with sources as a result of the Proposed Development.

Where the Proposed Development has already commenced, and this project commences during the construction phase, an appropriately qualified ECoW and ecologist will monitor this project's phases and the drainage network connected with the Cariganass stream to monitor any level of sediment or other pollutant flowing downstream during the Proposed Development's construction phase. Should

such pollutants be observed, works relating to the Proposed Development will be paused until the stream returns to its baseline state before any watercourse related works for the Proposed Development are recommenced.

9.1.4. Mitigation for Spread of Invasive Alien Species

A detailed Invasive Alien Species Report has been prepared to avoid causing the spread of invasive plant species. This will be adopted during all stages (e.g. construction, operation, and decommissioning) of the Proposed Development and reviewed/updated in response to any significant changes in the ecological baseline regarding invasive non-native plant species. Control measures within the ISR will include measures against:

9.1.4.1. Japanese Knotweed

As the Japanese Knotweed is located on private property, eradication may not be possible. Therefore, it is advised that a 7m radius around any Japanese Knotweed located onsite is cordoned off and marked with a restricted access sign. All soil excavated within this 7m radius must be treated as biohazardous material due to the potential for presence of rhizomes. Any vehicles which enter this precautionary 7m must undergo Check, Clean, Dry protocol after leaving the marked area to prevent potential spread of any material.

9.1.4.2. American Mink

An artificial Otter holt will be placed on the western boundary of the Proposed Development. Increased Otter presence may in turn deter the presence of American Mink onsite, providing biological control for the invasive species, as they are in direct competition for resources and some studies have indicated that recovering Otter populations may reduce presence of American Mink (McDonald *et al.*, 2007).

9.1.4.3. General Management Measures

- If an IAS is identified on site in addition to the already identified locations, contact your Site Supervisor/HSEQ Advisor for instructions on how to proceed;
- Implement controls as instructed by the HSEQ Advisor;
- Information on IAS/training will be provided at induction stage to all staff/Site Operatives; and
- If additional IAS are identified onsite, changes to the Invasives Species Report may be deemed necessary, and the Client should be contacted before proceeding with works.
- Appropriate signage for IAS will be used;
- Locations where Japanese Knotweed occurs will be fenced off to prevent disturbance and prevent access. This involves fencing-off the IAS including a 7m buffer zone to stop workers and machinery entering these areas;
- Suppliers of any soil or aggregates, brought on to the site are required to assure that it is free of any IAS;
- All tyres and tracks should be checked/cleaned before leaving a site where an IAS has been identified to prevent inadvertently spreading the species;

- Soils and plant materials will be cleaned from tools, equipment, vehicles and work clothes before entering and leaving the work site;
- Before removing any plants and shrubs, they will be checked that they are not a Third Schedule/First Schedule Invasive Species; and
- Contaminated soils will be treated carefully. If wastes are being transported off site, ensure that they are appropriately transported by a licensed waste carrier who is informed that the waste material contains an invasive species as part of the waste transfer documentation.

9.2. Operational Phase

9.2.1. Mitigation for Displacement/Disturbance

Mitigation is required to avoid adverse effects on a QI (Otter) of the Blackwater River (Cork/Waterford) SAC arising from visual and noise disturbance.

Vehicles on site for maintenance and general operations will not be within 20m of existing watercourses. Any substantial works (Excavations, heavy machinery, or extended human presence) within 150m of the proposed artificial Otter holt will be conducted outside the core breeding period to avoid disturbance.

Minor works to repair panels, manage BEMP areas or manage electrical connections will be conducted outside of peak activity hours. Signage to advocate consideration for Otter and other mammals will be placed across the solar array land parcels to ensure all staff onsite are aware of the Otter to reduce the likelihood of major disturbance events impacting Otter.

9.3. Decommissioning Phase

9.3.1. Mitigation for Displacement/Disturbance

Mitigation is required to avoid adverse effects on a QI (Otter) of Blackwater River (Cork/Waterford) SAC arising from visual and noise disturbance.

Vehicles on site for maintenance and general operations will not be within 20m of existing watercourses. Any substantial works (Excavations, heavy machinery, or extended human presence) within 150m of the proposed artificial Otter holt will be conducted outside the core breeding period to avoid disturbance.

Minor excavation works to remove arrays, transformers and cables will be conducted outside of peak activity hours. Signage to advocate consideration for Otter and other mammals will be placed across the solar array land parcels to ensure all staff onsite are aware of the Otter to reduce the likelihood of major disturbance events impacting Otter.

10. RESIDUAL EFFECTS

Table 10.1 displays the impact assessment for the identified QIs where likely adverse effects could not be ruled out in the absence of mitigation and confirms the residual effects following the application of mitigation measures.

Table 10.1: *Residual effects of the Proposed Development following mitigation measures.*

Blackwater River (Cork/Waterford) SAC					
Receptor [Code]	Attributes	Ex situ impact category (AA Screening)	In-Combination Effects	Mitigation	Residual Effects
Otter <i>Lutra lutra</i> [1355]	Distribution	Disturbance to ex-situ Otter; Ex-situ Otter habitat fragmentation; Changes in key indicators of conservation status value for ex-situ Otter (water quality)	No	Mitigation outlined in Section 9.1.2, 9.1.3, 9.1.4, and 9.2.1 shall be followed	No Significant adverse effect
	Extent of terrestrial habitat	Ex-situ Otter habitat fragmentation	No	Mitigation outlined in Section 9.1.4 shall be followed	No Significant adverse effect
	Extent of freshwater (river) habitat	Disturbance to ex-situ Otter; Ex-situ Otter habitat fragmentation	No	Mitigation outlined in Section 9.1.2, 9.1.4, and 9.2.1 shall be followed	No Significant adverse effect
	Fish Biomass availability	Changes in key indicators of conservation status value for ex-situ Otter (water quality)	No	Mitigation outlined in Section 9.1.3 shall be followed	No Significant adverse effect
	Barriers to connectivity	Disturbance to ex-situ Otter; Changes in key indicators of conservation status value for ex-situ Otter (water quality)	No	Mitigation outlined in Section 9.1.2, 9.1.4 and 9.2.1 be followed	No Significant adverse effect

11. CONCLUSION

This NIS has been prepared to provide sufficient objective scientific information in support of the Proposed Development, in order to identify and address potential adverse effects on the integrity of any European sites (also referred to as Natura 2000 sites) from the Proposed Development, alone and/or in-combination with other plans or developments.

Stage 1 Screening of LSEs on European sites identified within a ZOI for the Proposed Development evaluated potential likely significant effects on the QIs of Blackwater River (Cork/Waterford) SAC which could not be excluded (i.e. screened out) at this stage.

The Screening for LSEs determined, on the basis of objective information, that the Proposed Development, individually or in combination with other plans or projects, **would not have a likely significant effect** on the following **six** European sites due to separation distances through the relevant pathways and absence of ranges supporting ex-situ ranges for the respective QI/SCI species to be receptors of effects:

- Ballymacoda (Clonpriest and Pillmore) SAC;
- Ardmore Head SAC;
- Blackwater Estuary SPA;
- Ballymacoda Bay SPA;
- Ballycotton Bay SPA; and
- Cork Harbour SPA.

As such, by virtue of the requirement for protection or provision of mitigation measures required during construction of the Proposed Development, the recommendation of the screening process was to proceed to Stage Two of the AA process for one European site (Blackwater River (Cork/Waterford) SAC).

In particular, consideration was given to the potential for significant ex-situ effects via **contamination, spread of invasive species, disturbance, and displacement** during the Proposed Development's construction phase, and via **disturbance and displacement** during the operation and decommissioning phase. Thus, the above elements were brought forward for further critical examination during Stage 2 AA. This identified requirements for further mitigation measures during the construction and operation of the Proposed Development.

Cumulative and In-combination effects are presented and considered in detail in **Section 8** of this NIS. Provided adherence to the overarching policies and objectives of the plans and programmes and best practice and mitigation measures are implemented for individual projects, there is no potential for the mentioned plans and projects to have a cumulative impact to features of biodiversity interest, in combination with the Proposed Development. All Proposed Developments considered in the ZOI of the Proposed Development are subject to the statutory planning process and where required are accompanied by the requisite planning and environmental assessment documentation, including AA, and EIA. To that end, other projects, programmes and plans within the project zone of influence have been developed under the consideration of potential impacts and effects to their receiving and surrounding environment and are tasked with avoiding and minimising such impacts, through the AA and EIA processes.

It is determined that, following the implementation of mitigation measures for the protection of designated QIs, as outlined in **Section 9**, on the basis of best scientific evidence and in the absence of any reasonable scientific doubt, that the Proposed Development, individually or in combination with any other development, **will not adversely affect** the integrity of any European site.

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