

RNLI Afloat Berth, Courtmacsherry

Site Investigations

Supporting Information for Screening for Appropriate Assessment (SISAA) Report



RNLI Afloat Berth, Courtmacsherry

Site Investigations

SISAA Report

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Prepared by:

RPS

Prepared for:

RNLI (Ireland) Limited

TABLE OF CONTENTS

Glossary	iii
Acronyms	iv
Units	v
1 Introduction.....	1
1.1 Appropriate Assessment	1
1.1.1 The Habitats Directive.....	2
1.1.2 Domestic Legislation.....	2
1.1.3 The Appropriate Assessment Process.....	2
1.2 Document Structure.....	3
1.2.1 Methodology and Guidance	3
1.2.2 Proposed Development	3
1.2.3 Stage One Screening Appraisal.....	3
2 Methodology	5
2.1 Published guidance on Appropriate Assessment	5
2.2 Likely Significant Effect.....	6
2.3 Mitigation Measures	7
2.4 Consideration of <i>Ex-situ</i> Effects.....	7
2.5 Conservation Objectives.....	8
2.5.1 Site-Specific Conservation Objectives	8
2.6 In-combination Effects	9
3 The Proposed Development	10
3.1 Introduction.....	10
3.2 Background	10
3.3 Scope of proposed Ground Investigations.....	11
3.4 Samples for Geotechnical Purposes	12
3.4.1 Frequency of Sampling.....	12
3.4.2 Undisturbed Samples	12
3.4.3 Survey Vessels	14
3.4.4 Investigations.....	14
4 Screening Appraisal	16
4.1 Directly connected with or necessary to the management of the site	16
4.2 European sites.....	16
4.3 Ascertaining Whether Impact Pathways Exist	22
4.4 Possible Effects	22
4.4.1 Habitat Loss.....	22
4.4.2 Water Quality	24
4.4.3 Underwater Disturbance	25
4.4.4 Aerial Disturbance and Displacement.....	28
4.5 In-Combination Effects	31
5 Conclusion of the Screening Appraisal.....	34
References	38
Appendix 1: Annex IV species risk assessment	41

LIST OF FIGURES

Figure 1.1: Step-wise procedure of Article 6 of the Habitats Directive	4
Figure 3.1: Site Location	10
Figure 3.2: Proposed Afloat Berth Concept Layout.....	11
Figure 3.3: Proposed Site Investigation Locations	13
Figure 3.4: Existing slipway.....	15
Figure 4.1: Site Location in relationship to its nearest designated SAC and SPA.....	17
Figure 4.2: Site Location in relationship to wider European sites.....	18
Figure 4.3: Site Location in relationship to its nearest marine mammal SAC.....	19
Figure 4.4: Proposed Ground Investigations and Annex I habitats of Courtmacsherry Estuary SAC .	23
Figure 4.5: Courtmacsherry Bay SPA SCI species recorded in proximity to the proposed G.I. works	30

LIST OF TABLES

Table 3.1: Exploratory Hole Details.....	12
Table 4.1: European sites within the zone of influence of the proposed development.....	20
Table 4.2: Details of other projects considered in-combination with the proposed Ground Investigation activities	33
Table 5.1: Summary of the Stage 1 Appraisal to Inform Screening for Appropriate Assessment	35

Glossary

Term	Meaning
Appropriate Assessment	Appropriate Assessment (AA) is required for projects deemed likely to have a significant effect on a European site. AA comprises both the process for determining whether an Appropriate Assessment of the environmental risk is required (Stage 1 Screening), and if necessary, a Stage 2 Appropriate Assessment
Bathymetry	The measurement of water depth in oceans, seas and lakes.
Biotope	The combination of physical environment (habitat) and its distinctive assemblage of conspicuous species.
Foreshore	Section 1 of the Foreshore Act 1933 as amended defines 'foreshore' as 'means the bed and shore, below the line of high water of ordinary or medium tides, of the sea and of every tidal river and tidal estuary and of every channel, creek, and bay of the sea or of any such river or estuary'
Foreshore Lease Area	The Arklow Bank Wind Park area in which the wind turbines, foundations, inter-array cables, interconnector cables and offshore substation platform(s) will be located.
European sites	SACs and SPAs.
Hydroid	Hydroids are a life stage for most animals of the class Hydrozoa, small predators related to jellyfish.
Infauna	Animals living within the sediments of the seabed.
Intertidal area	The area between the high water mark (HWM) and the low water mark (LWM)
Landfall	The area in which the offshore export cables make landfall and is the transitional area between the offshore cabling and the onshore cabling.
Lee of the structure	The opposite side of the structure from the prevailing current.
Natura 2000	A network of European sites throughout the European Union.
Non-statutory stakeholder	Organisations with whom the Regulatory Authorities may choose to engage who are not designated in law but are likely to have an interest in a proposed development.
Onshore cable route	The route of the proposed underground electrical cable between the proposed landfalls and the proposed onshore substation site.
Offshore export cable route(s)	The offshore export cable route(s) between the Foreshore Lease Area and the northern landfall in which the offshore export cables will be located.
Prescribed bodies	Organisations that are required to be consulted by the Regulatory Authorities, and who also have a duty to respond to consultation requests within a set deadline.
Stage 1 screening for appropriate assessment	The first stage of a step-wise procedure in accordance with Article 6 of the Habitats Directive, comprising a preliminary 'screening' stage to determine whether, firstly, the plan or project is directly connected with or necessary to the management of a European site, and secondly, whether it is likely to have a significant effect on the site.
Stage 2 appropriate assessment	The second stage of a step-wise procedure in accordance with Article 6 of the Habitats Directive, comprising an assessment of implications of a plan or project on a European site in view of the site's conservation objectives.
The Department	The Department of Housing, Local Government and Heritage. The Department is the competent authority in respect of the Application for an Extension under the Foreshore Act 1933, and as amended.
The Foreshore Section	Marine Planning and Foreshore Section of the Department of Housing, Local Government and Heritage.
The Minister	The Minister for Housing, Local Government and Heritage.
The 2000 Act	The Planning and Development Act 2000, as amended.
The 2011 Regulations	The European Communities (Birds and Natural Habitats) Regulations 2011, as amended which transposes the Habitats Directive into Irish law.
The Birds Directive	Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version).

Term	Meaning
The Habitats Directive	Council Directive 92/43/EEC of 21 May 1992 on the Conservation of natural habitats and of wild fauna and flora.
The PDA	The Planning and Development Act 2000, as amended.
Tidal excursion	The horizontal distance over which a water particle may move during one cycle of flood and ebb.

Acronyms

Term	Meaning
AA	Appropriate Assessment
AIS	Automatic Identification Systems
AtoN	Aids to Navigation
CMS	Construction Method Statement
CO	Conservation Objective. COs are set for QIs and SCIs of European sites, and published by the SNCB
CTV	Crew Transfer Vessel
DHLGH	Department of Housing, Local Government and Heritage
DP	Dynamic Positioning (DP) vessel
EC	European Community (1993-2009) (<i>for alternative meaning, see also below</i>)
EC	European Commission (used in this report when referring to publications of the Commission)
EEC	European Economic Community (pre-1993)
EEZ	Exclusive economic zone
EMP	Environmental Management Plan
EU	European Union (2009-present)
FLO	Fisheries Liaison Officer
HAT	Highest Astronomical Tide
HRA	Habitats Regulations Appraisal
HVAC	High Voltage Alternating Current
HWM (also MHWS)	High Water Mark – the level reached by the sea at high tide (Mean High Water Springs)
IAA	Irish Aviation Authority
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
ICAO	International Civil Aviation Organisation
IPS	Intermediate Periphery Structures
LAT	Lowest Astronomical Tide
LWM (also MLWS)	Low Water Mark – the level reached by the sea at low tide (Mean Low Water Springs)
LSE	Likely Significant Effects (the stage 1 test of AA)
MSO	Marine Survey Office
NIS	Natura Impact Statement (the document prepared by the developer containing a Stage 2 appraisal for appropriate assessment to determine whether or not adverse effects on the integrity of the sites concerned will occur)
NPWS	National Parks and Wildlife Service, an executive agency of the Heritage Division of the Department of Culture, Heritage and the Gaeltacht. In Ireland, NPWS is the SNCB
NtM	Notice to Mariners
OSP	Offshore Substation Platform
PDA	The Planning and Development Act 2000, and as amended
PTS	Permanent Threshold Shift
QI	Qualifying Interest. A feature of a SAC that underpins its designation as a European site

Term	Meaning
ROV	Remotely Operated Vehicle
SAC	Special Area of Conservation (a type of European site) and part of Natura 2000
SCADA	Supervisory Control and Data Acquisition system
SCI	Special Conservation Interest. A feature of a SPA that underpins its classification as a European site (<i>for alternative meaning, see also below</i>)
SCI	A Site of Community Importance which, in the biogeographical region or regions to which it belongs, contributes significantly to the maintenance or restoration at a favourable conservation status of a natural habitat type or of a species and may also contribute significantly to the coherence of Natura 2000
SI	Site Investigation
SISAA	Supporting Information for Screening for Appropriate Assessment (the document prepared by the developer containing a Stage 1 screening appraisal for appropriate assessment to determine whether or not likely significant effects on the sites concerned can be excluded without recourse to a Stage 2 appropriate assessment)
SNCB	Statutory Nature Conservation Body
SPA	Special Protection Area (a type of European site) and part of Natura 2000
SPS	Significant Peripheral Structure
SSCO	Site specific conservation objective
TTS	Temporary Threshold Shift

Units

Unit	Description
cm	Centimetre (distance)
dB	Decibel (unit used to measure the intensity of sound)
dB(A)	Noise measurements made with A-weighted scale; follows the frequency sensitivity of the human ear at low levels
GW	<i>Gigawatt (power; equal to one thousand megawatts)</i>
ha	<i>Hectare (area)</i>
kJ	Kilojoules
kph	Kilometres per hour (<i>speed</i>)
kV	Kilovolt (electrical potential)
kW	<i>Kilowatt (power)</i>
Hz	Hertz
m	Metre (distance; equal to one hundred centimetres)
km	Kilometre (distance; equal to one thousand metres)
m/s	Metres per second (wind speed)
MW	Megawatt (power; equal to one million watts)
nm	Nautical Mile (distance; equal to 1.852 km)

1 INTRODUCTION

This report forms supporting information for Screening for Appropriate Assessment and is referred to as a **SISAA Report**. It has been prepared by RPS on behalf of RNLI (Ireland) Limited (the applicant for a Foreshore Licence).

The purpose of this report is to analyse and evaluate scientific information through a structured appraisal process, to examine whether or not proposed site investigations to inform design of a proposed afloat berth development is likely to result in a significant effect on any European site.

This report provides scientific supporting information to assist the Minister for Housing, Local Government and Heritage, the Marine Licence Vetting Committee (MLVC) and Marine Advisory Unit (MAU) of the Department of Housing, Local Government and Heritage (DHLGH), and their Independent Environmental Consultant (IEC) in undertaking a Screening for Appropriate Assessment of the proposed site investigations in accordance with the provisions of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended (the '2011 Regulations').

1.1 APPROPRIATE ASSESSMENT

With the introduction of the Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) came the obligation to establish the Natura 2000 network of Sites of Community Interest (SCIs), comprising a network of areas of highest biodiversity importance for rare and threatened habitats and species across the European Union (EU).

The Natura 2000 network of sites comprises Special Areas of Conservation (SACs, including candidate SACs or cSACs) designated under legislation transposing the obligations under Directive [92/43/EEC](#), and Special Protection Areas (SPAs, including proposed SPAs) classified under the Birds Directive (Directive [2009/147/EC](#) on the conservation of wild birds) and designated under Irish legislation. SACs and SPAs are referred to as European sites.

In this SISAA report, cSACs and SACs are referred to as SACs throughout the appraisal, and there is no distinction made between candidate sites and designated sites as the appropriate assessment procedure does not treat them differently. For the purposes of an appropriate assessment conducted under 2011 Regulations, they are one and the same.

SACs are designated for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are designated for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is designated correspond to the Qualifying Interests (QIs) of the sites in the case of SACs, and Special Conservation Interests (SCIs) of the sites in the case of SPAs. From these qualifying interests, the Conservation Objectives (COs) of the site are derived.

1.1.1 The Habitats Directive

Article 6(3) of the Habitats Directive requires that–

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. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and if appropriate, after having obtained the opinion of the general public.

1.1.2 Domestic Legislation

For the purposes of applications for planning permission, Part XAB of the Planning and Development Act 2000, as amended (“the PDA”) implemented the obligations under Article 6(3) into Irish law. In relation to other consent regimes such as Foreshore licensing, the provisions of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended (“the 2011 Regulations”), transpose those obligations.

This report has not been drafted in support of an application for planning permission, and so the provisions of the 2011 Regulations are applicable.

1.1.2.1 Screening

Regulation 42 of the 2011 Regulations requires *inter alia* that screening for appropriate assessment of a project, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.

1.1.2.2 Appropriate Assessment

Regulation 42 of the 2011 Regulations requires *inter alia* that a public authority shall determine that an appropriate assessment of a project is required where the project is not directly connected with or necessary to the management of the site as a European Site and if it cannot be excluded, on the basis of objective scientific information following screening that the project, individually or in combination with other plans or projects, will have a significant effect on a European site.

1.1.3 The Appropriate Assessment Process

According to European Commission guidance documents ‘Assessment of plans and projects in relation to Natura 2000 sites’ (EC, 2021); ‘Guidance document on wind energy developments and EU nature legislation’ (EC, 2020); and ‘Managing Natura 2000 sites: The Provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC’ (EC, 2019); the obligations arising under Article 6 establish a step-wise procedure as illustrated in **Figure 1.1**.

The first part of this procedure consists of a screening stage to determine whether, firstly, a plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site; it is governed by Article 6(3), first sentence.

The second part of the procedure, governed by Article 6(3), second sentence, relates to the appropriate assessment and the decision of the competent national authorities.

A third part of the procedure (governed by Article 6(4)) comes into play if, despite a negative assessment, it is proposed not to reject a plan or project but to give it further consideration. In this case Article 6(4) allows for derogations from Article 6(3) under certain conditions.

The extent to which the sequential steps of Article 6(3) applies to a given plan or project depends on several factors, and in the sequence of steps, each step is influenced by the previous step. The order in which the steps are followed is therefore essential for the correct application of Article 6(3).

Each step determines whether a further step in the process is required. If, for example, the competent or public authority arrives at a conclusion at the end of a Stage 1 Screening for Appropriate Assessment is that significant effects on European sites can be excluded in the absence of any best practice or targeted measures intended to avoid or reduce the harmful effects of the proposed development on European sites, there is no requirement to proceed to the next step.

1.2 DOCUMENT STRUCTURE

1.2.1 Methodology and Guidance

Section 2 of the report sets out the methodology followed and guidance documents used in conducting a stage one screening appraisal of the implications of the proposed development on European sites.

1.2.2 Proposed Development

Section 3 of the report describes the proposed development, and is the basis of the subsequent stage one screening appraisal that follows.

1.2.3 Stage One Screening Appraisal

Section 4 of the report contains a preliminary examination and analysis to examine whether or not the proposed works are likely to have a significant effect on any European site. This is a Stage 1 screening appraisal containing supporting information to inform DHLGH in undertaking Screening for Appropriate Assessment.

It has been undertaken in view of best scientific knowledge, in light of the Conservation Objectives of the sites concerned and considers the proposed development individually and in combination with other plans and projects. Measures intended to avoid or reduce the harmful effects of the proposed development on European sites, (i.e. “mitigation measures”) or best practice measures have not been taken into account in the screening stage appraisal in this SISAA Report.

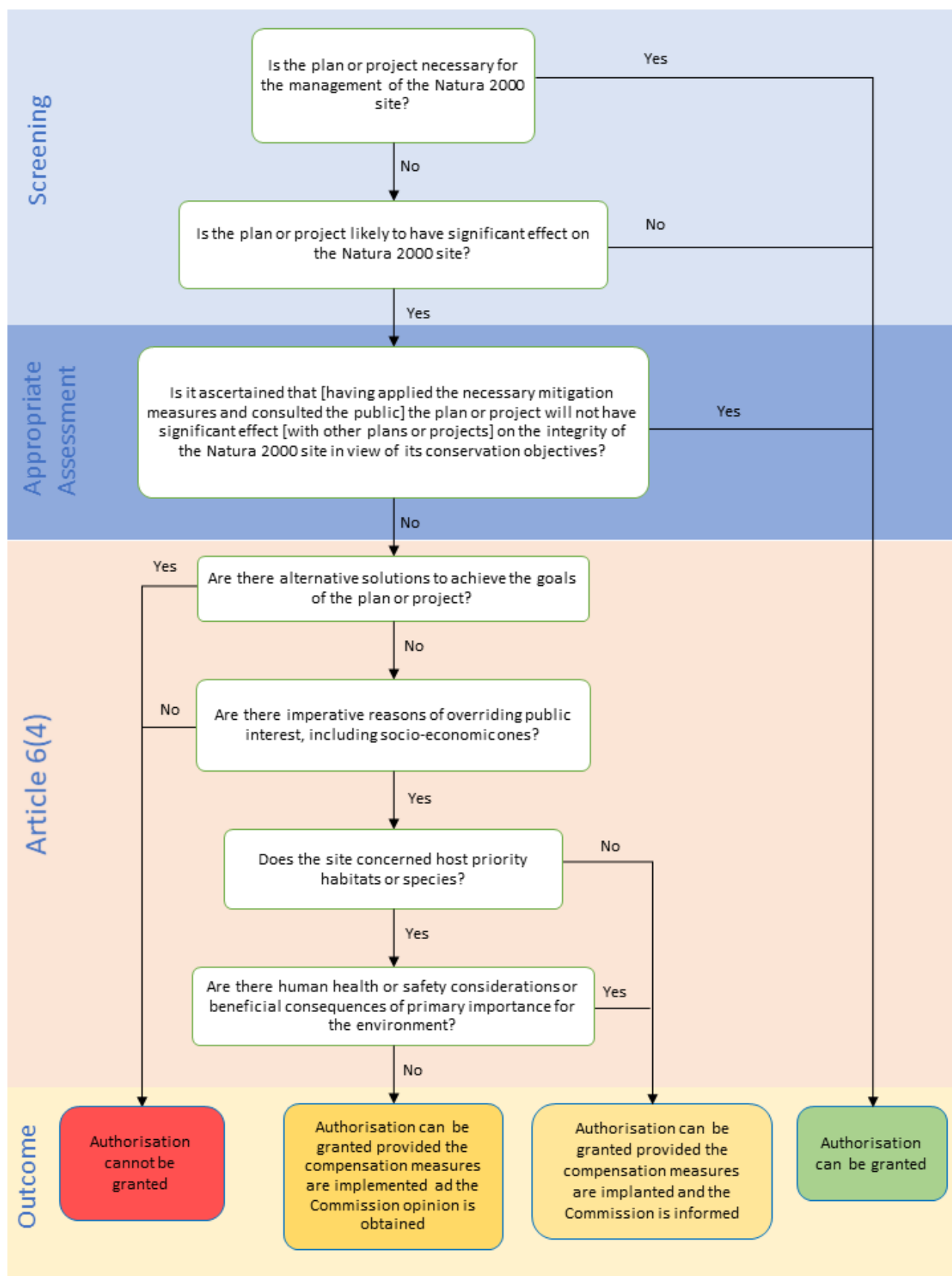


Figure 1.1: Step-wise procedure of Article 6 of the Habitats Directive (from EC, 2021)

2 METHODOLOGY

2.1 PUBLISHED GUIDANCE ON APPROPRIATE ASSESSMENT

Appropriate Assessment Guidelines for Planning Authorities have been published by the Department of the Environment Heritage and Local Government (DEHLG, 2010a). In addition to the advice available from the Department, the European Commission has published a number of documents which provide a significant body of guidance on the requirements of Appropriate Assessment, most notably including, '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' (EC, 2001), which sets out the principles of how to approach decision making during the process. These principal national and European guidelines have been followed in the preparation of this report. The following list identifies these and other pertinent guidance documents:

- Communication from the Commission on the Precautionary Principle., Office for Official Publications of the European Communities, Luxembourg (EC, 2000);
- 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, 2007);
- Estuaries and Coastal Zones within the Context of the Birds and Habitats Directives - Technical Supporting Document on their Dual Roles as Natura 2000 Sites and as Waterways and Locations for Ports. European Commission (EC, 2009);
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin (DEHLG, 2010a);
- Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities (DEHLG, 2010b);
- Guidance document on the implementation of the birds and habitats directive in estuaries and coastal zones with particular attention to port development and dredging. European Commission (EC, 2011a);
- European Commission Staff Working Document 'Integrating biodiversity and nature protection into port development' (EC, 2011b);
- Marine Natura Impact Statements in Irish Special Areas of Conservation: A working document, National Parks and Wildlife Service, Dublin (NPWS, 2012);
- Interpretation Manual of European Union Habitats. Version EUR 28. European Commission (EC, 2013);
- European Commission Notice C(2018) 7621 'Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC', Office for Official Publications of the European Communities, Luxembourg (EC, 2019);

- Institute of Air Quality Management 'A guide to the assessment of air quality impacts on designated nature conservation sites (Version 1.1)' (IAQM, 2020);
- Office of the Planning Regulator Practice Note (PN01) 'Appropriate Assessment Screening for Development Management' (OPR, 2021); and
- European Commission Notice C(2021) 6913 'Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC', Office for Official Publications of the European Communities, Luxembourg (EC, 2021).

2.2 LIKELY SIGNIFICANT EFFECT

The Commission's 2018 Notice (EC, 2019) advises that the appropriate assessment procedure under Article 6(3) is triggered not by the certainty but by the likelihood of significant effects, arising from plans or projects regardless of their location inside or outside a protected site. Such likelihood exists if significant effects on the site cannot be excluded. The significance of effects should be determined in relation to the specific features and environmental conditions of the site concerned by the plan or project, taking particular account of the site's conservation objectives and ecological characteristics.

The threshold for a Likely Significant Effect ("LSE") is treated in the screening exercise as being above a *de minimis* level. 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 judgement has been made in the absence of reasonable scientific doubt, then those effects are not considered to be LSEs.¹

The analysis involved in a Stage 1 screening appraisal for Appropriate Assessment is described in EC (2021) as comprising of four steps:

- ascertaining whether the plan or project is directly connected with or necessary to the management of a Natura 2000 site;
- identifying the relevant elements of the plan or project and their likely impacts;
- identifying which (if any) Natura 2000 sites may be affected, considering the potential effects of the plan or project alone or in combination with other plans or projects;
- assessing whether likely significant effects on the Natura 2000 site can be ruled out, in view of the site's conservation objectives.

Case law of the Court of Justice of the European Union (CJEU) has confirmed that a significant effect is triggered when:

¹ Paragraph 48 of the [Opinion of Advocate General Sharpston in CJEU Case C-258/11](#): "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 the 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".

- there is a probability or a risk of a plan or project having a significant effect on a European site;
- the plan is likely to undermine the site's conservation objectives; and
- a significant effect cannot be excluded on the basis of objective information.

EC (2021) defines a LSE as being “any effect that may reasonably be predicted as a consequence of a plan or project that would negatively and significantly affect the conservation objectives established for the habitats and species significantly present on the Natura 2000 site. This can result from either on-site or off-site activities, or through combinations with other plans or projects”.

The requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis or negligible threshold – thus, plans or projects that have no appreciable or imperceptible effects on the site are thereby excluded.

2.3 MITIGATION MEASURES

In determining whether or not likely significant effects will occur or can be excluded in the Stage 1 appraisal, measures intended to avoid or reduce the harmful effects of the proposed development on European sites, (i.e. “mitigation measures”) or best practice measures have not been taken into account in this screening stage appraisal. This approach is consistent with EU guidance and the case law of the Court of Justice of the European Union (CJEU).

EC (2001) states that “project and plan proponents are often encouraged to design mitigation measures into their proposals at the outset. However, it is important to recognise that the screening assessment should be carried out in the absence of any consideration of mitigation measures that form part of a project or plan and are designed to avoid or reduce the impact of a project or plan on a Natura 2000 site”. This direction in the European Commission’s guidance document is unambiguous in that it does not permit the inclusion of mitigation at screening stage.

In April 2018, the Court of Justice of the European Union issued a ruling in case C-323/17 *People Over Wind & Peter Sweetman v Coillte Teoranta* (“People Over Wind”) that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

The judgment in *People Over Wind* is further reinforced in EC (2019) which refers to CJEU Case C-323/17.

2.4 CONSIDERATION OF *EX-SITU* EFFECTS

EC (2019) advises that Member States, both in their legislation and in their practice, allow for the Article 6(3) safeguards to be applied to any development pressures - including those which are external to European sites but which are likely to have significant effects on any of them.

The CJEU developed this point when it issued a ruling in case C-461/17 (“Brian Holohan and Others v An Bord Pleanála”) that determined inter alia that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that an appropriate assessment must on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

In that regard, consideration has been given in this Habitats Directive appraisal to implications for habitats and species located outside of the European sites considered in the appraisal with reference to those sites’ Conservation Objectives where effects upon those habitats and/or species are liable to affect the conservation objectives of the sites concerned.

2.5 CONSERVATION OBJECTIVES

The conservation objectives for each European site are to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the site has been selected.

The favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing;
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable.

The favourable conservation status (or condition, at a site level) of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

2.5.1 Site-Specific Conservation Objectives

NPWS began preparing detailed Site-Specific Conservation Objectives (SSCOs) for European sites in 2011. Of the European sites in closest proximity to the proposed development which are considered in relative detail in this report, the majority have had SSCO set.

The published SSCO documents note that an appropriate assessment based on the most up to date conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out.

The most up-to-date Conservation Objectives for the European sites being considered have been used in this appraisal. Details in relation to the Qualifying Interests and Special Conservation Interests of these European sites is based on publicly available data sourced from the relevant Statutory Nature Conservation Bodies in Ireland in September 2022.

2.6 IN-COMBINATION EFFECTS

Article 6(3) of the Habitats Directive requires that in-combination effects with other plans or projects are also considered. As set out in EC (2019), significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned.

EC (2020) notes that cumulative environmental effects can be defined as effects on the environment caused by the combined action of past, current and future activities. Although the effects of one development may not be significant, the combined effects of several developments together can be significant. Cumulative effects are relevant to wind energy deployment, given the continuously growing number of applications for wind energy production and the expected increase in capacity over the coming years.

EC (2020) also notes that the ‘in combination’ provision applies to plans or projects that are completed, approved but uncompleted, or proposed. In addition to the effects of the plans or projects that are the main subject of the assessment, it may be appropriate to consider the effects of already completed plans and projects. Although already completed plans and projects are themselves excluded from the assessment requirements of Article 6(3), it is still important to take them into consideration when assessing the effects of the current plan or project in order to determine whether there are any potential cumulative effects arising from the current project in combination with other completed plans and projects. The effects of completed plans and projects would typically form part of the site’s baseline conditions at this stage. Plans and projects that have been approved in the past but have not yet been implemented or completed should be included in the in-combination provision. As regards other proposed plans or projects, on grounds of legal certainty 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.

This mirrors the advice contained in EC (2019) which advises that other plans or projects which are completed, approved but uncompleted, or proposed have been considered. EC (2019) specifically advises that “as regards other proposed plans or projects (i.e. other projects not proposed by the Applicant), on grounds of legal certainty it would seem appropriate to restrict the in-combination provision to those which have been actually proposed, i.e. for which an application for approval or consent has been introduced”.

3 THE PROPOSED DEVELOPMENT

3.1 INTRODUCTION

RNLI (Ireland) Limited (“RNLI”) wish to undertake a marine ground investigation and subsequent reporting of a site at Courtmacsherry Harbour, County Cork, Republic of Ireland, as shown on **Figure 3.1** below. The ground investigation works will include provision of adequate ground investigation information to enable the design of a new jetty and berth and to inform disposal options for dredged sediment material.

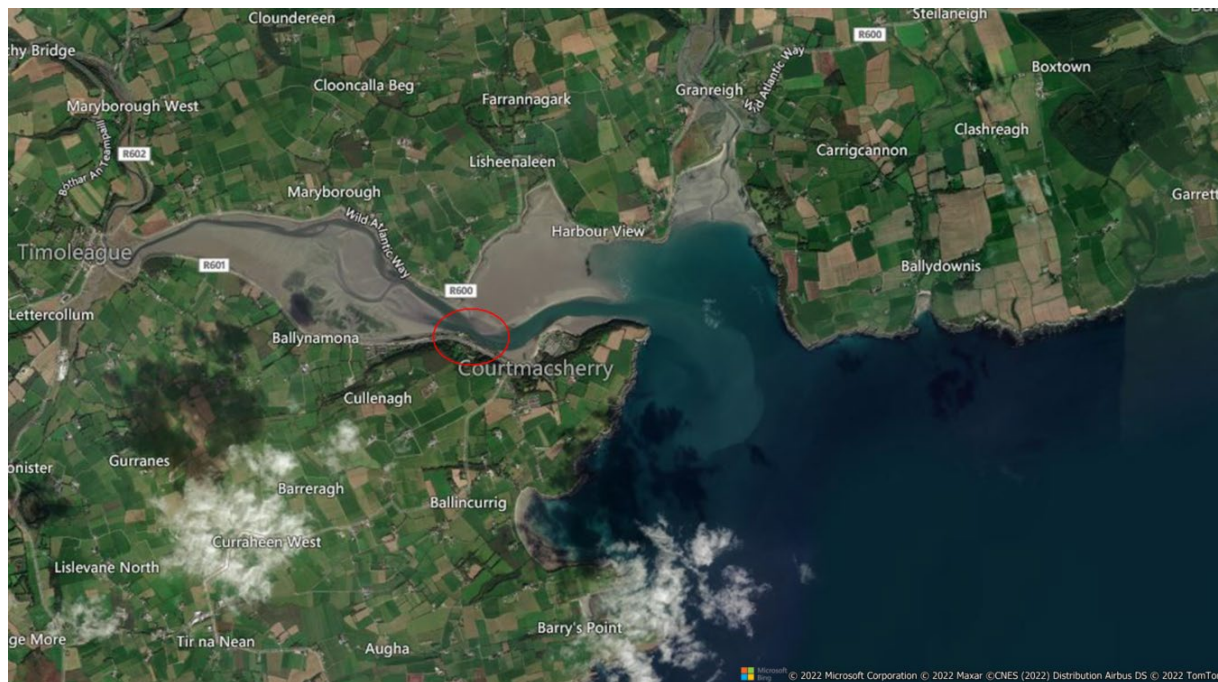


Figure 3.1: Site Location

3.2 BACKGROUND

A ground investigation is required to characterise the ground conditions and to determine, if present, the levels of contamination within sediment material which will be dredged. The ground investigation is primarily required to provide information on the ground conditions at the site, which will facilitate the geotechnical design considerations of the proposed jetty and berth.

Courtmacsherry is an extensive estuary which lies to the west of the Old Head of Kinsale on the south coast of Ireland. The estuary mainly runs east west and has extensive sand banks and shoals within the estuary. The village of Courtmacsherry lies on the southern shore of the estuary where there is a relatively deep water channel, an existing pier and the RNLI station lifeboat house and mooring.

A Shannon Class lifeboat is due to come into service at Courtmacsherry and the RNLI prefers to moor ‘All Weather Lifeboats’ at an afloat / alongside berth, where possible, so that the power for these vessels can be shore connected. IN advance of ground investigations to inform the design of the berthing system,

a concept layout has been provided (Figure 3.2). The site currently consists of the RNLI lifeboat house and existing slipway.



Figure 3.2: Proposed Afloat Berth Concept Layout

3.3 SCOPE OF PROPOSED GROUND INVESTIGATIONS

The reference specification for the ground investigation works shall be the Engineers Ireland 'Specification and Related Documents for Ground Investigation in Ireland, 2016' and the works shall be carried out in accordance with BS5930:2015+A1:2020, BS10175:2011+A2:2017 and with the requirements of Eurocode 7 Part 2. The extent of the site investigations is illustrated in **Figure 3.3**. The scope of these works will generally comprise the following:

- Provision of hand-dig inspection pits at each land based exploratory hole location to avoid buried services to 1.2m below ground level.
- The Ground Investigation contractor shall use a Cable Avoidance Tool (CAT) and Genny scans to check for buried services prior to the commencement of each land based exploratory hole.
- Sampling of sediment from vibrocores for laboratory testing. Environmental samples shall be taken from the vibrocores at the surface, at 0.5m, then every metre, or every change in strata or when contamination is suspected.
- Three (3) boreholes advanced to a depth of 25.00m bgl. The boreholes will be undertaken within the marine/water environment. There may be existing concrete to break through associated with the existing jetty and allowance should be made for this within the Bill of Quantities.
- Logging of the soil and vibrocores by an experienced engineering geologist or geotechnical engineer.

- In-situ and laboratory geotechnical testing.
- Chemical testing of subsoils at a UKAS and MCERTS accredited laboratory.
- Geotechnical factual reporting compliant with Eurocode 7. This report shall include the contractor's interpretation of the ground conditions with regard to the proposed development's foundations.

Exploratory holes shall be progressed to the depth given in Table 3.1. Exploratory holes must not be terminated without the prior approval of the Investigation Supervisor (RPS).

It is envisaged that the fieldwork will be completed within 10 days followed by laboratory testing and reporting within 6 weeks of the completion of the field works. Overall the proposed timescale for the project will be 8 weeks from commencement to completion.

Table 3.1: Exploratory Hole Details

Type	No.	Target depth	Time required per sample	Note
Borehole	3	25.00m	24-48 hrs	Target depth is 25 m
Vibrocore	12	4.00m	1-2 hrs	Vibrocores to be retrieved at each location to a depth of 4 m below seabed level

3.4 SAMPLES FOR GEOTECHNICAL PURPOSES

3.4.1 Frequency of Sampling

The following sampling frequency will apply to the boreholes:

- In soft to firm alluvial deposits, open-tube samples are to be taken. In granular material, SPT testing is to be carried out. In stiff boulder clay, alternate open-tube samples and SPT testing. The following spacings should be used:
 - The first sample/test taken at 0.5 m below ground level
 - The next at 1.0 m deeper, thereafter at 1.0 m depth intervals to 5.5 m depth below ground level
 - Then at 1.5 m depth intervals to 25 m depth below ground level
- Where an open tube sample cannot be taken, an SPT is to be carried out.
- Small disturbed samples shall be taken of the topsoil/seabed, at each change in soil type or consistency and midway between successive open-tube samples or SPTs.
- Bulk disturbed samples shall be taken of each soil type and where no sample is recovered with an SPT or U100.

3.4.2 Undisturbed Samples

Open Tube or Piston samples shall be taken using the sampling equipment and procedures as described in BS EN ISO 22475-1 and BS5930:2015. The nominal diameter shall be 100mm.



Figure 3.3: Proposed Site Investigation Locations

3.4.3 Survey Vessels

The shallow water depth and anticipated conditions of the survey area will require a small jack-up barge suitable for shallow water depths at nearshore sites; and a small vessel capable of undertaking discrete activities such as vibrocores in shallow water depths. Larger vessels and Jack-Ups suitable for deeper water with dynamic positioning capabilities are not required.

These vessels will be comparable to those typically used in the industry for carrying out similar technical work in shallow water and will possess all relevant classification certificates, complying with international and national statutes as appropriate. The appointed contractor will be responsible for all shipboard systems and equipment calibration and re-calibration, including spares. The vessels will conform to the following minimum requirements as appropriate:

- S.I. No. 507/2012 - Merchant Shipping (Collision Regulations) (Ships and Water Craft on the Water) Order 2012;
- Sea Pollution Act 1991 which transposes into Irish statute the requirements of the International Convention for the Prevention of Marine Pollution from Ships (MARPOL 73/78);
- Sea Pollution (Amendment) Act, 1999 - which gives effect to the International Convention on Oil;
- Pollution Preparedness, Response and Co-operation, 1990 (OPRC);
- S.I. No. 372/2012 - Sea Pollution (Prevention of Pollution by Garbage from Ships) Regulations 2012;
- S.I. No. 492/2012 - Sea Pollution (Prevention of Pollution by Sewage from Ships) (Amendment) Regulations 2012; and
- Sea Pollution (Miscellaneous Provisions) Act 2006 – which gives effect to the International Convention on Ballast Water Management 2004 (amongst others).

3.4.4 Investigations

The purpose of the geotechnical survey is to evaluate the nature and mechanical properties of the sub-surface sediments to a depth below which possible existence of weak formations will not influence the safety or performance of the proposed berthing development.

3.4.4.1 Boreholes

A borehole is a method of drilling into the substrate to recover samples and enable downhole geotechnical testing to be completed. Boreholes have been preferentially selected to accommodate plant accessing the locations from the existing slipway (see Figure 3.4). A drilling head is lowered to underlying stratum via a drill string. The drill string is then rotated to commence boring. Tools are lowered into the drill string to recover samples (eg push, piston or hammer samples) or conduct in-situ soil testing such as downhole permeability testing (eg packer tests). Soil and rock samples will be taken from the borehole for subsequent laboratory testing. All drilling fluids will be in compliance with environmental requirements. Boreholes will be drilled using soil sampling techniques including push,

piston, hammer sampling or conduct in-situ soil testing such as downhole permeability testing (eg packer tests) and rotary coring in either soil (eg stiff clays) or rock.



Figure 3.4: Existing slipway

3.4.4.2 Vibrocore Sampling

The vibrocorer is lowered onto the seabed, position and depth are noted, after which the vibrocore sampling process is started. Upon refusal or at target depth, the stop condition is recorded and the vibrocorer is recovered on deck where the recovery rate is measured. The rig will be fitted with a PVC liner, core catcher and cutting shoe. If required, a core catcher can be used to prevent the sample dropping out of the PVC liner.

Cores will be examined offshore, and testing may be carried out in an offshore laboratory aboard the vessel while other samples will be adequately sealed for onshore testing. Recovered disturbed material and soil found in the vibrocore sampling shoe will be stored in a bag.

4 SCREENING APPRAISAL

4.1 DIRECTLY CONNECTED WITH OR NECESSARY TO THE MANAGEMENT OF THE SITE

The Applicant is seeking a foreshore licence to carry out ground investigation survey works to provide information to enable the design of a new jetty and berth and to inform disposal options for dredged sediment material.

The proposed works are not directly connected with or necessary to the management of any European Site and as such, are subject to the provisions of the Article 6(3) procedure laid down by the Habitats Directive and its national implementing legislation (section 1.1.2).

4.2 EUROPEAN SITES

Given the location of the site of the proposed ground investigation survey works, within the marine environment, and within both Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA as illustrated in Figure 4.1, these two European sites will be considered in the SISAA report. There are no other European sites within the Argideen River catchment upstream of Courtmacsherry. The Bawnaknockane-Leamawaddra-Coastal catchment sits adjacent to Courtmacsherry Bay to the east. No European sites sit within that catchment except for the Old Head of Kinsale SPA, located 11.1km east of the site of the proposed ground investigations around one headland and then across open sea (refer Figure 4.2). The Roury-Coastal catchment sits adjacent to Courtmacsherry Bay to the south and west. Within that catchment there are no hydrologically connected European sites. The Seven Heads SPA is located 4.7km by sea around two headlands from the site of the proposed ground investigations (refer Figure 4.2). These two European sites will also be considered in the SISAA report. Marine mammals are highly mobile and can wandering individuals of these populations can potentially be present in the works area. The nearest SAC designated for marine mammals is Roaringwater Bay and Islands SAC, 58 km (by sea) west of Courtmacsherry Estuary (refer Figure 4.3

Having firstly determined that the proposed ground investigation survey work are not directly connected with or necessary to the management of any European sites (refer Section 4.1 above), the identified European sites will be screened against the activities to be undertaken as part of the proposed ground investigation survey work in order to ascertain whether or not they are likely to have a significant effect on any of those European sites. Details in relation to the Qualifying Interests and Special Conservation Interests of these European sites are provided in Table 4.1. The information contained in these tables is based on publicly available data on these European Sites, which along with the most up-to-date Conservation Objectives for the European sites under consideration, have been sourced from the relevant Statutory Nature Conservation Bodies in Ireland in September 2022.

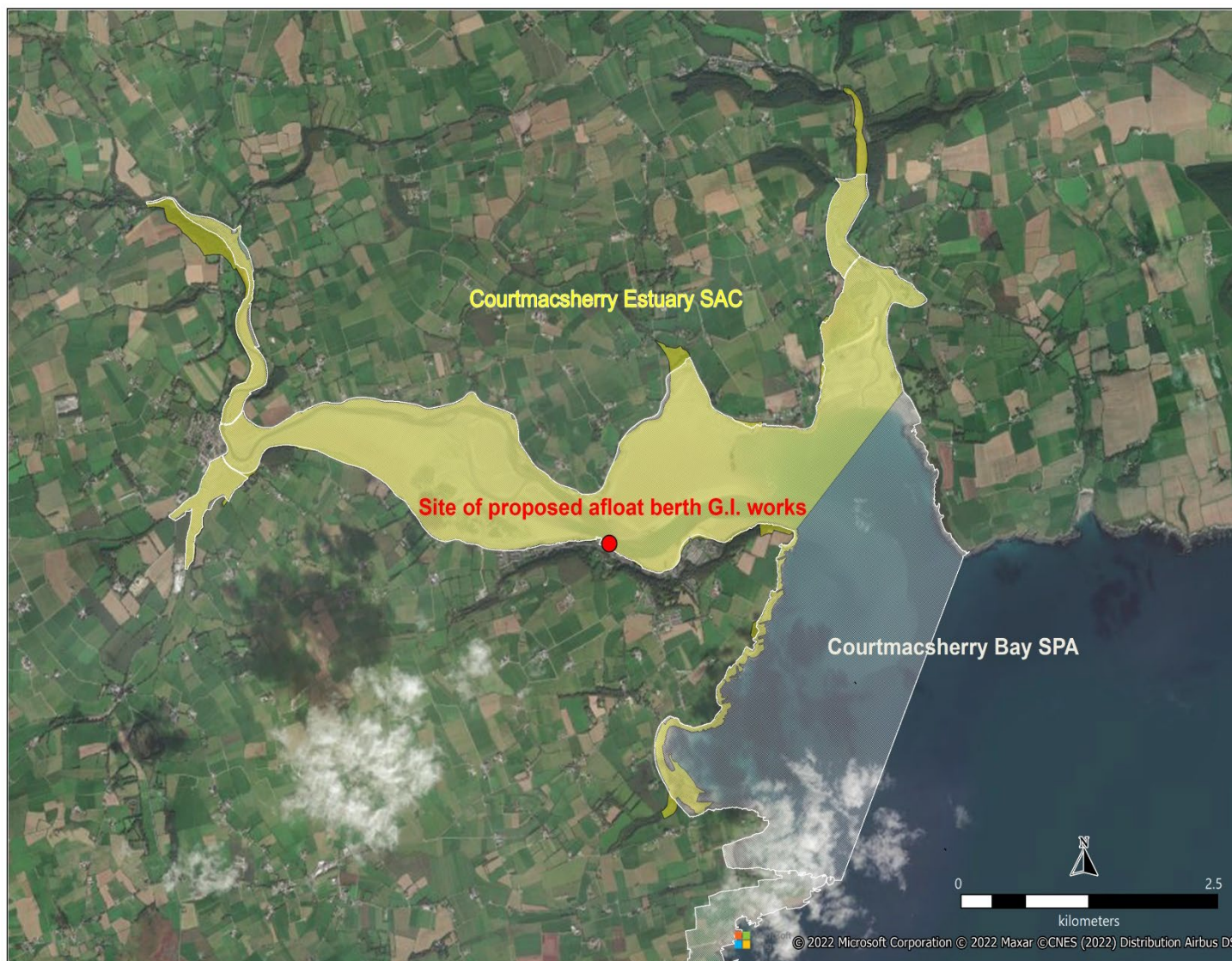


Figure 4.1: Site Location in relationship to its nearest designated SAC and SPA



Figure 4.2: Site Location in relationship to wider European sites



Figure 4.3: Site Location in relationship to its nearest marine mammal SAC

Table 4.1: European sites within the zone of influence of the proposed development

Site Code	Site Name	Qualifying Feature(s)	Conservation Objectives	Distance from proposed development
IE001230	Courtmacsherry Estuary SAC	• Estuaries [1130] • Mudflats and sandflats not covered by seawater at low tide [1140] • Annual vegetation of drift lines [1210] • Perennial vegetation of stony banks [1220] • Salicornia 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] • Embryonic shifting dunes [2110] • Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] • Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	NPWS (2014a)	0 m
IE004219	Courtmacsherry Bay SPA	• Great Northern Diver (<i>Gavia immer</i>) [A003] • Shelduck (<i>Tadorna tadorna</i>) [A048] • Wigeon (<i>Anas penelope</i>) [A050] • Red-breasted Merganser (<i>Mergus serrator</i>) [A069] • Golden Plover (<i>Pluvialis apricaria</i>) [A140] • 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] • Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] • Common Gull (<i>Larus canus</i>) [A182] • Wetlands and Waterbirds [A999]	NPWS (2014b)	0 m
IE004191	Seven Heads SPA	• Chough (<i>Pyrrhocorax pyrrhocorax</i>) [A346]	NPWS (2022a)	4.7 km
IE004021	Old Head of Kinsale SPA	• Kittiwake (<i>Rissa tridactyla</i>) [A188] • Guillemot (<i>Uria aalge</i>) [A199]	NPWS (2022b)	11.1 km

Site Code	Site Name	Qualifying Feature(s)	Conservation Objectives	Distance from proposed development
IE000101	Roaringwater Bay and Islands SAC	• Large shallow inlets and bays [1160] (not considered) • Reefs [1170] (not considered) • Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] (not considered) • European dry heaths [4030] (not considered) • Submerged or partially submerged sea caves [8330] (not considered) • <i>Phocoena phocoena</i> (Harbour Porpoise) [1351] (considered) • <i>Lutra lutra</i> (Otter) [1355] (considered) • <i>Halichoerus grypus</i> (Grey Seal) [1364] (considered)	NPWS (2011)	58 km

4.3 ASCERTAINING WHETHER IMPACT PATHWAYS EXIST

The possibility of significant effects is considered using a source-pathway-receptor model. ‘Source’ is defined as the individual elements of the proposed works that have the potential to affect the identified ecological receptors both within the European site and outside of it in accordance with the ‘Holohan’ judgment (refer Section 2.4 above). ‘Pathway’ is defined as the means or route by which a source can affect the ecological receptor. ‘Ecological receptor’ is defined as the Special Conservation Interests (for SPAs) or Qualifying Interests (of SACs) for which conservation objectives have been set for the European sites under consideration. Each element can exist independently however an effect is created when there is a linkage between the source, pathway and receptor.

Possible direct and indirect effects arising as a result of activities undertaken as part of the proposed ground investigation survey works are discussed under the following themes:

- Direct Effects
 - Habitat loss and significant habitat deterioration (“Habitat Loss”)
- Indirect Effects
 - Diminution in water quality and associated aquatic habitat deterioration (“Water Quality”)
 - Underwater noise and acoustic disturbance or displacement (“Underwater Disturbance”)
 - Aerial noise and visual disturbance or displacement (“Aerial Disturbance”)

4.4 POSSIBLE EFFECTS

4.4.1 Habitat Loss

The site of the proposed ground investigation survey works is located within both estuarine habitat and intertidal mudflat habitat. These areas correspond to two Annex I habitat types which are qualifying interests of Courtmacsherry Estuary SAC (*Estuaries* [1130] and *Mudflats and sandflats not covered by seawater at low tide* [1140]). The Courtmacsherry Estuary SAC Conservation Objectives (NPWS, 2014a) shows the area where ground investigations are proposed as containing the ‘*Sand with Nephrys cirrosa community complex*’ marine community type associated with both the estuary and mudflat habitats of the SAC (refer Map 5 of NPWS 2014a, and Table 1 of NPWS 2014c). This area is also part of the intertidal wetland habitat of Courtmacsherry Bay SPA and forms part of the Wetlands and Waterbirds [A999] special conservation interest of that SPA (refer Figure 4.4, and Table 1 of NPWS 2014c).

Courtmacsherry Estuary SAC is also for saltmarsh, perennial vegetation, drift line and sand dune habitats. The Courtmacsherry Estuary SAC Conservation Objectives Supporting Document for Coastal Habitats (NPWS, 2014c) describes and illustrates the sand dune habitats as occurring at Garranafeen Strand at a site known as Harbour View. This site is 2.9 km from the site of the proposed ground investigations (refer Map 6 of NPWS 2014a).

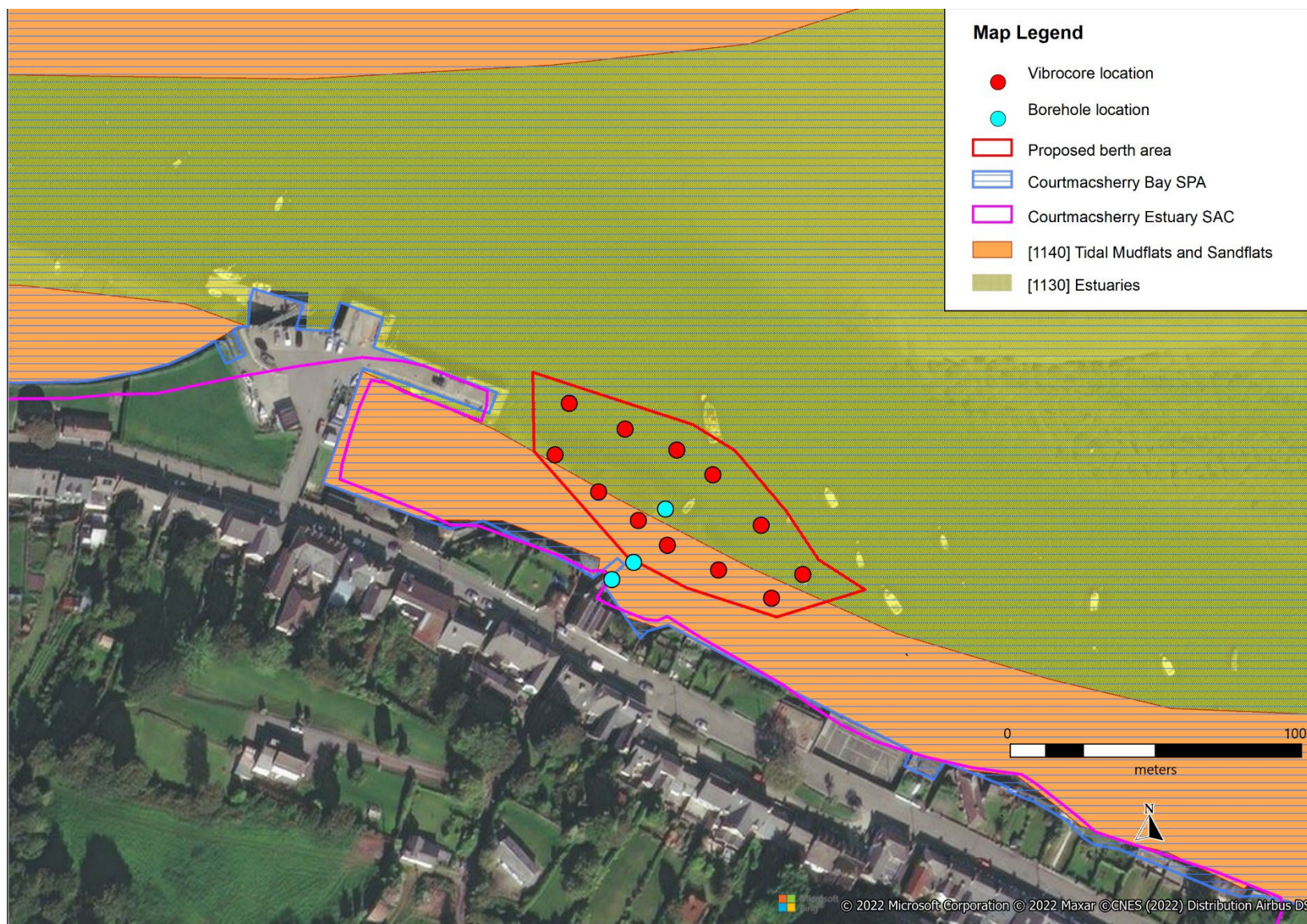


Figure 4.4: Proposed Ground Investigations and Annex I habitats of Courtmacsherry Estuary SAC

The nearest shingle beach habitat is located at Broadstrand Bay, a distance of 4.3 km by sea from the site of proposed works. Saltmarsh habitats occur at Garranafeen Strand (3 km away) and potential saltmarsh habitats also occur at Timoleague, at least 3.0 km away (refer Map 7 of NPWS 2014a).

The conservation objectives for Courtmacsherry Estuary SAC (NPWS, 2014a) require the maintenance or restoration of the favourable conservation condition of its Annex I habitats. Their component objectives all include attributes, measures and targets to maintain the permanent area of the habitats concerned.

The conservation objectives for Courtmacsherry Bay SPA (NPWS, 2014b) require the maintenance or restoration of the favourable conservation condition of the wetland habitats of the SPA. Its component objectives also includes attributes, measures and targets to maintain the permanent area of the habitat.

There is a possibility that the proposed ground investigation works could result in loss or deterioration of two qualifying interest habitats of Courtmacsherry Estuary SAC (*Estuaries* [1130] and *Mudflats and sandflats not covered by seawater at low tide* [1140]) and/or wetland habitats of Courtmacsherry Bay SPA and as such likely significant effects cannot be excluded at the screening stage of appraisal in the absence of further evaluation or analysis or the application of mitigation measures.

There is no possibility of habitat loss or significant deterioration of the saltmarsh, shingle beach or sand dune habitats of Courtmacsherry Estuary SAC, or any habitats of Seven Heads SPA or the Old Head of Kinsale SPA. That conclusion can be drawn in the absence of mitigation measures.

4.4.2 Water Quality

As outlined above, the proposed works are to be carried out in the estuary. There is a very clear hydrological link and a direct pathway of effect between the areas where the works are to be carried out and the intertidal and estuarine Annex I habitats of Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA. Any engineering activity in the marine environment has potential to give rise to water quality impacts and associated habitat deterioration through the release of seabed sediments or contaminants, such as petrochemical fuels and lubricants.

If elevated concentrations of suspended sediments or pollutants accidentally escaped to surrounding marine waters as a result of the proposed ground investigation survey works, the water quality of certain Annex 1 habitats of SAC or the wetland habitat of the SPA could deteriorate. The non-breeding waterbird populations which are special conservation interests of Courtmacsherry Bay SPA are dependent on the intertidal wetland habitats of the SPA as a feeding resource throughout the overwintering period.

There is a possibility that the proposed ground investigation works could result in diminution in water quality and associated estuarine and intertidal habitat deterioration and as such likely significant effects on Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA cannot be excluded at the screening stage of appraisal in the absence of further evaluation or analysis or the application of mitigation measures.

Chough is the sole special conservation interest of Seven Heads SPA. Chough does not use marine habitats and does not prey on marine life. There is no pathway of effect for diminution of water quality in Courtmacsherry Bay as a result of the proposed ground investigation works to affect Chough in any way. There is no possibility of likely significant effects on Seven Heads SPA. That conclusion can be drawn in the absence of mitigation measures.

Old Head of Kinsale SPA is designated for its breeding seabird populations comprising c. 2% of the all-Ireland total populations of Kittiwake [951 pairs] and Guillemot [2,330 pairs].

Kittiwake are seabirds with a mean maximum foraging range of 156.1 ± 144.5 km and a mean foraging range of 54.7 ± 50.4 (Woodward *et al.* 2019), and they rely upon marine waters for their prey items. Key prey items for Kittiwake include small pelagic shoaling fish, marine invertebrates, and key habitats include fronts, tidal upwellings and eddies, offshore sandbanks, and areas over rocky seabed. The species preferentially selects water depths of between 10m and 25m to fish (Birdlife International, 2011). Shallow intertidal zones and nearshore zones such as those occurring in Courtmacsherry Bay in the area around where the proposed ground investigation works are occurring are not important for this species at a population level. There is no possibility of likely significant effects on this species at Old Head of Kinsale SPA. That conclusion can be drawn in the absence of mitigation measures.

Guillemot are seabirds with a mean maximum foraging range of 55.5 ± 39.7 km and a mean foraging range of 23.9 ± 21.1 (Woodward *et al.* 2019), and they also rely upon marine waters for their prey items. Key prey items for Guillemot include pelagic fish and crustaceans, and key habitats include fronts and other ocean features that concentrate prey, offshore sandbanks, areas of sandy sediment (Birdlife International, 2011). Shallow intertidal zones and nearshore zones such as those occurring in Courtmacsherry Bay in the area around where the proposed ground investigation works are occurring are not important for this species at a population level. There is no possibility of likely significant effects on this species at Old Head of Kinsale SPA. That conclusion can be drawn in the absence of mitigation measures.

4.4.3 Underwater Disturbance

Whereas habitats are not, species can be vulnerable to underwater noise and disturbance. The proposed ground investigation survey works have the potential to create underwater noise causing disturbance to or displacement of, or injure individuals of marine mammal and fish species forming prey items of marine mammals (and seabirds). Courtmacsherry Estuary SAC is not designated for any marine mammals. The closest SAC designated for marine mammals is Roaringwater Bay and Islands SAC, 58 km (by sea) west of Courtmacsherry Estuary (refer Figure 4.3). Harbour Porpoise *Phocoena phocoena* [1351], Otter *Lutra lutra* [1355] and Grey Seal *Halichoerus grypus* [1364] are qualifying interests of that European site. To understand if it is necessary to consider SACs designated for highly mobile marine mammal species in this SISAA report, an Annex IV Species Risk Assessment report prepared by IWDG Consulting in support of a Foreshore licence application for the ground investigation works was reviewed. That report describes distribution of these Annex II and IV qualifying interest

species (in addition to further Annex IV species) along this stretch of the Cork coastline and Celtic Sea. It is appended to this SISAA report as Appendix 1.

Figure 2.2 of the report shows that harbour porpoise has been recorded in the outer Courtmacsherry Bay but there are no records in proximity to the site of the proposed ground investigation works. The report notes that harbour porpoise are known to particularly associate with areas of strong tidal currents for foraging (Berrow et al. 2014).

Figure 2.7 of the report shows that otter has been recorded in Courtmacsherry Bay in proximity to the site of the proposed ground investigation works. Otter is most frequently encountered at sea in nearshore environments close to freshwater sources. In addition to this resource, otter survey results for a foreshore licence application (Ref: FS006969, see section 4.5) by Cork County Council to dredge an area around Courtmacsherry Pier were reviewed. Those survey results (from a survey conducted in April 2019) revealed indirect evidence of otter presence along the shoreline of Courtmacsherry village, mainly in the form of spraints. In addition, features of interest such as potential holts, temporary resting sites and freshwater outfalls were also recorded.

Figure 2.8 of the report shows that grey seal has been recorded in Courtmacsherry Bay in proximity to the site of the proposed ground investigation works but that most records occur in deeper water in the outer reaches of Courtmacsherry Bay.

The conservation objectives of these species were then reviewed to better understand if the proposed ground investigation works would have any effect on the objectives set for those qualifying interest populations in Roaringwater Bay and Islands SAC.

Conservation objectives for harbour porpoise in Roaringwater Bay and Islands SAC are to maintain the favourable conservation condition of the species in the SAC, as defined by 2 no site specific conservation objective attributes and targets:

Access to suitable habitat: Species range **within the site** should not be restricted by artificial barriers to site use

Disturbance: Human activities should occur at levels that do not adversely affect the harbour porpoise community **at the site**

The ‘*Conservation objectives supporting document – Marine habitats*’ for Roaringwater Bay and Islands SAC (NPWS, 2011) notes that the conservation targets for harbour porpoise relate to proposed activities or operations that will result in the permanent exclusion of harbour porpoise from part of its range **within the SAC**, or will permanently prevent access for the species to suitable habitat **within the SAC**, and are not intended to relate to short-term or temporary restriction of access or range.

The proposed ground investigation works are located 58 km from this SAC and are short term works. There is no possibility that the works could interfere with maintaining the favourable conservation

condition of harbour porpoise in the SAC as they will not permanently prevent access to suitable habitat or exclude the species from its range within the SAC.

Conservation objectives for grey seal in Roaringwater Bay and Islands SAC are to maintain the favourable conservation condition of the species in the SAC, as defined by 6 no site specific conservation objective attributes and targets:

<i>Access to suitable habitat:</i>	Species range <u>within the site</u> should not be restricted by artificial barriers to site use
<i>Breeding behaviour:</i>	The breeding sites should be maintained in a natural condition
<i>Moulting behaviour:</i>	The moult haul-out sites should be maintained in a natural condition
<i>Resting behaviour:</i>	The resting haul-out sites should be maintained in a natural condition
<i>Population composition:</i>	The grey seal population occurring within this site should contain adult, juvenile and pup cohorts annually
<i>Disturbance:</i>	Human activities should occur at levels that do not adversely affect the grey seal population <u>at the site</u>

The ‘*Conservation objectives supporting document – Marine habitats*’ for Roaringwater Bay and Islands SAC (NPWS, 2011) notes that the conservation targets for grey seal relate to proposed activities or operations that will result in the permanent exclusion of grey seal from part of its range **within the SAC**, or will permanently prevent access for the species to suitable habitat **within the SAC**, and are not intended to relate to short-term or temporary restriction of access or range. Also, the targets relate to operations or activities that could cause displacement of individuals from a breeding, moulting or resting haul-out site or alteration of natural breeding, moulting or resting behaviour to an extent that may ultimately interfere with key ecological functions of the population.

The proposed ground investigation works are located 58 km from this SAC and are short term works. There is no possibility that the works could interfere with maintaining the favourable conservation condition of grey seal in the SAC as they will not restrict access to suitable habitat within the SAC or exclude the species from its range within the SAC and they will not displace seals from their haul out sites within the SAC or alter their behaviour at those haul out sites.

Conservation objectives for otter in Roaringwater Bay and Islands SAC are to maintain the favourable conservation condition of the species in the SAC, as defined by 7 no SSCO attributes and targets:

<i>Distribution:</i>	No significant decline
<i>Extent of terrestrial habitats:</i>	No significant decline

Extent of marine habitats: No significant decline

Extent of freshwater (river) habitats: No significant decline

Couching sites and holts: No significant decline

Fish biomass available: No significant decline

Barriers to connectivity: No significant increase

The ‘*Conservation objectives supporting document – Marine habitats*’ for Roaringwater Bay and Islands SAC (NPWS, 2011) is silent on the site specific conservation objectives for otter at this site. It is however reasonable to view the objectives for otter in light of the context set for porpoise and seal objectives as described in the conservation objectives supporting document for those marine mammals, in that the conservation targets for otter ought to relate to proposed activities or operations that will result in the permanent exclusion of the species from part of its range within the SAC, or will permanently prevent access for the species to suitable habitat within the SAC, and are not intended to relate to short-term or temporary restriction of access or range.

The proposed ground investigation works are located 58 km from this SAC. The otter signs present and recorded in the 2019 survey for another foreshore application are not otters associated with the Roaringwater Bay and Islands SAC population as otters do not travel >50 km distances to feed. There is no possibility that the works could cause a decline in the extent of couches, holts, or indeed terrestrial, marine or freshwater (river) habitats within the SAC. The works will not permanently prevent access to suitable habitat or exclude the species from its range within the SAC. There is no risk of the proposed ground investigation works interfering with maintaining the favourable conservation condition of otter in the SAC.

The proposed ground investigation works will not result in likely significant effects on the mobile marine mammal qualifying interests of Roaringwater Bay and Islands SAC when the works are assessed against their conservation objectives. That conclusion can be drawn in the absence of mitigation measures.

4.4.4 Aerial Disturbance and Displacement

Whereas habitats are not, species can be vulnerable to aerial noise and visual triggers of disturbance. Courtmacsherry Bay SPA is designated for its non-breeding (or overwintering populations of the following waterbirds:

- Great Northern Diver
- Shelduck
- Wigeon
- Red-breasted Merganser
- Golden Plover
- Lapwing
- Dunlin
- Black-tailed Godwit

- Bar-tailed Godwit
- Black-headed Gull
- Curlew
- Common Gull

The SPA includes intertidal and shallow wetlands that host these significant overwintering populations of waders and waterfowl, allowing them to forage and roost in shallow mudflats and estuaries. Conservation objectives for these overwintering birds relate to (1) population trends with the conservation target being that the long term population trend remains stable or increasing; and (2) the range, timing and intensity of use of areas of the SPA with the conservation target being no significant decrease in the range, timing or intensity of use of areas of the SPA by the relevant waterbird, other than that occurring from natural patterns of variation.

Therefore, the potential effect of the ground investigations in the wetland foreshore application area depends entirely on whether the special conservation interest species are present at all, and if they are, then if the works could occur in the non-breeding season when the birds are present.

An overwintering bird survey campaign was commissioned, and visits were undertaken twice each month between September 2021 and March 2022, for the purposes of recording overwintering waterbird activity adjacent to the proposed development area on the rising and falling tide, and on the high (or low) tide.

Most special conservation interest species were recorded in the area surrounding where ground investigations are proposed (refer Figure 4.5). The total, peak and mean counts are not important, for now, as they are not required to evaluate whether or not noise or visual induced stimulus could trigger changes in bird behaviour to bring about a disturbance effect.

The sounds that birds hear can be divided into threatening and non-threatening sounds. Examples of non-threatening sounds are wave noise on a beach or constant traffic noise from a road. Threatening sounds include impulsive sounds such as gunfire, explosion or barking of a dog. The sound of ground investigations can be impulsive but whether impulsive or not, once commenced, tends to be continuous and low frequency noise such as that made by machinery and vehicular traffic.

Disturbance often implies a short-term or temporary effect that is unlikely to impact upon the individuals or populations of waterbirds concerned. However, it is a term that covers a wide range of responses in waterbirds. Waterbirds are defined as “birds that are ecologically dependent on wetlands” (Ramsar Convention 1971). Disturbance is any situation in which human activities cause a bird to behave differently from the behaviour it would be reasonably expected to exhibit without the presence of that activity.



Figure 4.5: Courtmacsherry Bay SPA SCI species recorded in proximity to the proposed G.I. works

In the estuarine environment, disturbance can manifest in a number of forms of varying severity depending on the nature, duration and intensity of the disturbance source:

- Birds looking up or heads raised, temporarily stopping feeding or roosting
- Birds moving away from the cause of the disturbance by walking or swimming before resuming previous activity
- Birds taking flight and landing somewhere in the same feeding area or roosting site
- Birds taking flight and leaving their preferred foraging or roosting area completely

The presence of these SCI species over the wintering period in the area where ground investigations are proposed is sufficient to conclude that the possibility of likely significant noise and visual disturbance effects to the overwintering special conservation interests of Courtmacsherry Bay SPA cannot be excluded at the screening stage, in the absence of further analysis or evaluation and without the application of seasonal restrictions on timing of works (i.e. mitigation).

4.5 IN-COMBINATION EFFECTS

Article 6(3) of the Habitats Directive requires that in-combination effects with other plans or projects are also considered. As set out in the Commission's 2018 Notice (EC, 2019), significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned. The significance of any identified combined effects of the proposed Site Investigation activities and other past, present or reasonably foreseeable future plans or projects must be evaluated.

In that context, plans or projects which are completed, approved but uncompleted, or proposed have been considered. EC (2019) specifically advises that *"as regards other proposed plans or projects, on grounds of legal certainty it would seem appropriate to restrict the in-combination provision to those which have been actually proposed, i.e. for which an application for approval or consent has been introduced"*.

EC (2020) also notes that the 'in combination' provision applies to plans or projects that are completed, approved but uncompleted, or proposed. In addition to the effects of the plans or projects that are the main subject of the assessment, it may be appropriate to consider the effects of already completed plans and projects.

Given the location of the site, which is located in the shallow marine and intertidal environment of Courtmacsherry Estuary, the nature and timing of the works proposed and the potential pathways of effect identified above, it is considered that there is limited potential for the proposals to act in combination with other plans or projects to result in likely significant effects.

A review of planning permissions on the Cork County Council planning portal was undertaken. Foreshore licence applications and determinations on the Department of Housing, Local Government and Heritage website were also reviewed, and additionally, the register of EPA permits was searched for any dumping at sea, waste, wastewater or IPC permits that might be relevant.

Projects considered were limited to those with potential to have in-combination effects with the proposed ground investigation survey activities, namely marine developments or activities in the vicinity of the proposed ground investigations. A range of development projects as listed in Table 4.2 were considered in terms of their potential to give rise to in-combination effects with the proposed ground investigation survey activities.

As regards the Courtmacsherry Pontoon and any associated dredging activities, the project was permitted in 2022, and conditions attached to the licence require *inter alia* that no plant or machinery is stored on the foreshore, that a fuel management plan is prepared and implemented in addition to a range of general pollution prevention measures, and that works are carried out on high tide only, during daylight and between June and August in any year.

Notice to Mariners No. 16 of 2022 published by Cork County Council advises that the dredging operations were to commence on 8th August 2022 and last for three weeks. On this basis, there is no possibility that activities could be undertaken for that project at the same time as ground investigations for the RNLI project. The pontoon dredging project is complete. Any possible effects of temporary increases in suspended sediments will have long passed by the time RNLI ground investigations are programmed to occur. Any underwater sound generated by the pontoon works and any sources of potential aerial noise or visual stimuli of waterbird disturbance or displacement will have long passed by the time RNLI ground investigations are programmed to occur. There is no possibility of in-combination effects.

The emission discharges associated with the permitted slaughterhouse operations and licensed under the EPA Industrial Emissions regime have emission limit values on process emissions to water were conditioned to the licence by EPA to prevent diminution in water quality and associated aquatic habitat deterioration of Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA. On the basis that emissions from the permitted development discharge in line with the specified ELVs, there is no possibility of in-combination effects between the slaughterhouse emissions and the proposed RNLI ground investigation activities.

The wastewater discharges associated with the Irish Water agglomeration for Timoleague and Courtmacsherry and licensed by the EPA have emission limit values on discharges to the estuary to prevent diminution in water quality and associated aquatic habitat deterioration of Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA. On the basis that emissions from the permitted development discharge in line with the specified ELVs, in addition to the modern WWTP constructed at Courtmacsherry by Irish Water in 2020, there is no possibility of in-combination effects between wastewater discharges and the proposed RNLI ground investigation activities.

Table 4.2: Details of other projects considered in-combination with the proposed Ground Investigation activities

Reference	Applicant	Development	Notes on Appropriate Assessment
FS006969	Cork County Council	Foreshore licence granted August 2022 for removal and replacement of the existing pontoon and gangway, disconnection and reconnection of power and water supplies to the pontoon, dredging the channel and area immediately around the pontoon to a depth of -7.0m OD (proposed dredge footprint is 1,800m ²), and disposal of dredged material on land.	The Minister for Housing, Local Government and Heritage determined likely significant effects on Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA, and required a NIS to be prepared. Pollution prevention and timing restriction measures at construction stage were conditioned to the licence by the Department to prevent adverse effects on the integrity of the sites concerned.
P0947-02 18/717	Staunton Foods Limited	Industrial Emissions licence granted December 2021 for the operation of slaughterhouses approving discharge of up to 400 m ³ /day of treated process effluent, via the Abbey Quay outfall, to the Argdeen Estuary. Licence P0947-02 increases permitted discharge volume from 120 m ³ /day (under P0947-01) to 400 m ³ /day under P0947-02.	EIA development, also permitted under Planning Reg. Ref. 18/717. The EPA determined likely significant effects on Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA, and required a NIS to be prepared. Emission limit values on process emissions to water were conditioned to the licence by EPA to prevent adverse effects on the integrity of the sites concerned.
D0294-01	Irish Water	Wastewater discharge licence granted in April 2018 to Irish Water for the Timoleague and Courtmacsherry Agglomeration.	The effluent discharges from the Courtmacsherry and Timoleague agglomeration are contributing to nutrient enrichment within Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA. The EPA determined likely significant effects on Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA, and required a NIS to be prepared. Emission limit values on wastewater discharges and a specified improvement programme of works were conditioned to the licence by EPA to prevent adverse effects on the integrity of the sites concerned.
16/400	Irish Water	Planning permission granted in September 2016 for a new Sewerage Scheme for Courtmacsherry and Timoleague including new 2,500 pe WWTP.	Local Authority appropriate assessment cannot be sourced online. The applicant's NIS notes likely significant effects on Courtmacsherry Estuary SAC and Courtmacsherry Bay SPA, and proposed various mitigation measures to be implemented as part of a CEMP at construction phase to prevent adverse effects on the integrity of the sites concerned.

5 CONCLUSION OF THE SCREENING APPRAISAL

The stage one screening appraisal contained in this SISAA report was completed in compliance with EU and Irish law and the relevant European Commission and national guidelines to determine whether or not Likely Significant Effects on any European site could be excluded as a result of the proposed Ground Investigation activities.

The proposed ground investigation survey activities are not directly connected with or necessary to the management of any European site. From the findings of the screening stage appraisal presented, the possibility of Likely Significant Effects upon the European sites considered in the appraisal is set out in Table 5.1 below, which notes the outcome of the screening exercise for each qualifying interest or special conservation interest of each European site considered.

Likely significant effects cannot be excluded at the screening stage for the following Annex I qualifying interests of Courtmacsherry Estuary SAC:

- Estuaries [1130]
- Mudflats and sandflats not covered by seawater at low tide [1140]

Likely significant effects cannot be excluded at the screening stage for all special conservation interests of Courtmacsherry Bay SPA:

- Great Northern Diver (*Gavia immer*) [A003]
- Shelduck (*Tadorna tadorna*) [A048]
- Wigeon (*Anas penelope*) [A050]
- Red-breasted Merganser (*Mergus serrator*) [A069]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Lapwing (*Vanellus vanellus*) [A142]
- Dunlin (*Calidris alpina*) [A149]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Bar-tailed Godwit (*Limosa lapponica*) [A157]
- Curlew (*Numenius arquata*) [A160]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Common Gull (*Larus canus*) [A182]
- Wetlands and Waterbirds [A999]

Likely significant effects can be excluded for all other qualifying interests of Courtmacsherry Estuary SAC, and for all other European sites considered in this SISAA report.

Table 5.1: Summary of the Stage 1 Appraisal to Inform Screening for Appropriate Assessment

Site Code	Site Name	Qualifying Feature(s)	Can the possibility of Likely Significant Effects be excluded at the Screening Stage?			
			Habitat Loss	Water Quality	Underwater Disturbance	Aerial Disturbance
IE001230	Courtmacsherry Estuary SAC	Estuaries	no	no	n/a	n/a
		Mudflats and sandflats	no	no	n/a	n/a
		Annual vegetation	yes	yes	n/a	n/a
		Perennial vegetation	yes	yes	n/a	n/a
		Salicornia	yes	yes	n/a	n/a
		Atlantic salt meadows	yes	yes	n/a	n/a
		Mediterranean salt meadows	yes	yes	n/a	n/a
		Embryonic shifting dunes	yes	yes	n/a	n/a
		White dunes	yes	yes	n/a	n/a
		Grey dunes	yes	yes	n/a	n/a
IE004219	Courtmacsherry Bay SPA	Great Northern Diver	n/a	no	n/a	no
		Shelduck	n/a	no	n/a	no
		Wigeon	n/a	no	n/a	no
		Red-breasted Merganser	n/a	no	n/a	no
		Golden Plover	n/a	no	n/a	no
		Lapwing	n/a	no	n/a	no
		Dunlin	n/a	no	n/a	no
		Black-tailed Godwit	n/a	no	n/a	no
		Bar-tailed Godwit	n/a	no	n/a	no
		Curlew	n/a	no	n/a	no
		Black-headed Gull	n/a	no	n/a	no
		Common Gull	n/a	no	n/a	no
		Wetlands and Waterbirds	no	no	n/a	n/a
IE004191	Seven Heads SPA	Chough	yes	n/a	n/a	yes
IE004021	Old Head of Kinsale SPA	Kittiwake	yes	yes	yes	yes
		Guillemot	yes	yes	yes	yes

Site Code	Site Name	Qualifying Feature(s)	Can the possibility of Likely Significant Effects be excluded at the Screening Stage?			
			<i>Habitat Loss</i>	<i>Water Quality</i>	<i>Underwater Disturbance</i>	<i>Aerial Disturbance</i>
IE000101	Roaringwater Bay and Islands SAC	Large shallow inlets and bays	n/a	n/a	n/a	n/a
		Reefs	n/a	n/a	n/a	n/a
		Vegetated sea cliffs	n/a	n/a	n/a	n/a
		European dry heaths	n/a	n/a	n/a	n/a
		Sea caves	n/a	n/a	n/a	n/a
		Harbour Porpoise	yes	yes	yes	yes
		Otter	yes	yes	yes	yes
		Grey Seal	yes	yes	yes	yes

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APPENDIX 1: ANNEX IV SPECIES RISK ASSESSMENT

ANNEX IV SPECIES RISK ASSESSMENT

PROPOSED SITE INVESTIGATIONS - COURTMACSHERRY, CO CORK

September 2022

Prepared by
Dr Simon Berrow with maps by Megan Keaville



IWDG Consulting, Merchants Quay, Kilrush, Co Clare

1 | INTRODUCTION

The Irish Whale and Dolphin Group (IWDG) was contracted by RPS Ireland Limited on behalf of RNLI to carry out an Annex IV Species Risk Assessment of the potential impact on these species by the proposed ground investigation works at Courtmacsherry, Co Cork in relation to the development of the lifeboat berth.

A ground investigation is required to characterise the ground conditions and to determine, if present, the levels of contamination within sediment material which will be dredged. The ground investigation is primarily required to provide information on the ground conditions at the site, which will facilitate the geotechnical design considerations of the proposed jetty and berth.

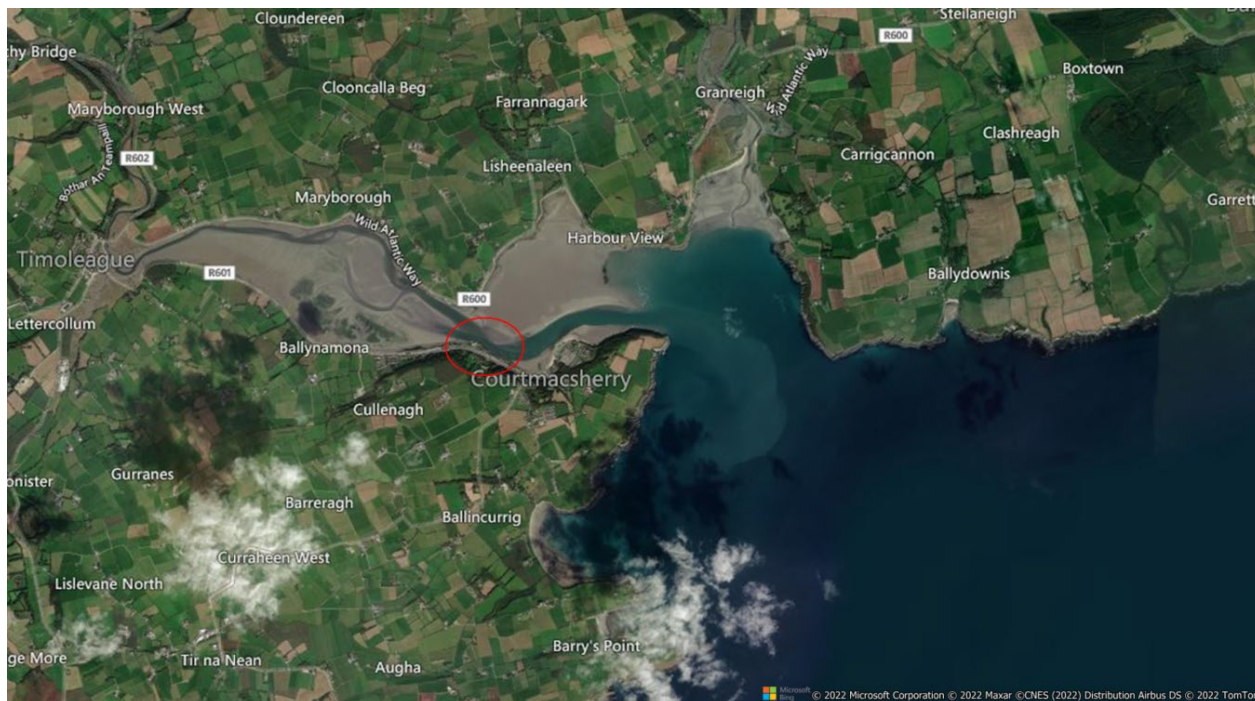


Figure 1. Courtmacsherry, Co Cork

Courtmacsherry is an extensive estuary which lies to the west of the Old head of Kinsale on the south coast of Ireland (Fig. 1). The estuary mainly runs east west and has extensive sand banks and shoals within the estuary. The village of Courtmacsherry lies on the southern shore of the estuary where there is a relatively deep water channel, an existing pier and the RNLI station lifeboat house and mooring.

A Shannon Class lifeboat is due to come into service at Courtmacsherry and the RNLI prefers to moor 'All Weather Lifeboats' at an afloat / alongside berth, where possible, so that the power for these vessels can be shore connected. A concept project layout is shown in **Figure 1.2**. The site currently consists of the RNLI lifeboat house and existing jetty.

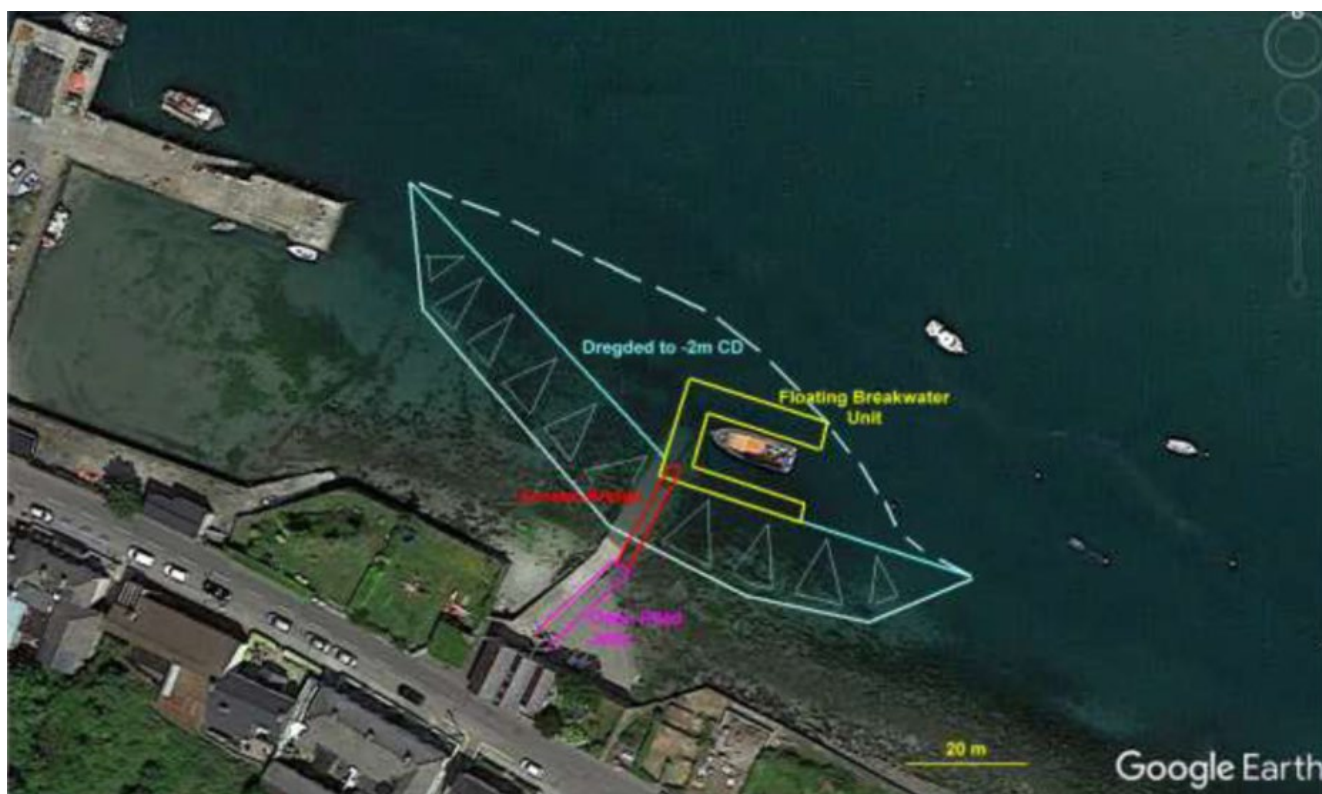


Figure 1.1: Proposed Berth - Concept Layout

1.1 Proposed works

The reference specification for the ground investigation works shall be the Engineers Ireland 'Specification and Related Documents for Ground Investigation in Ireland, 2016' and the works shall be carried out in accordance with BS5930:2015+A1:2020, BS10175:2011+A2:2017 and with the requirements of Eurocode 7 Part 2. The extent of the site investigations is illustrated in Figure 1.3.

The scope of these works will generally comprise the following:

- Provision of hand-dig inspection pits at each land based exploratory hole location to avoid buried services to 1.2m below ground level.
- The Ground Investigation contractor shall use a Cable Avoidance Tool (CAT) and Genny scans to check for buried services prior to the commencement of each land based exploratory hole.
- Sampling of sediment from vibrocores for laboratory testing. Environmental samples shall be taken from the vibrocores at the surface, at 0.5m, then every metre, or every change in strata or when contamination is suspected.
- Three (3) boreholes advanced to a depth of 25.00m bgl. The boreholes will be undertaken within the marine/water environment. There may be existing concrete to break through associated with the existing jetty and allowance should be made for this within the Bill of Quantities.
- Logging of the soil and vibrocores by an experienced engineering geologist or geotechnical engineer.
- In-situ and laboratory geotechnical testing.
- Chemical testing of subsoils at a UKAS and MCERTS accredited laboratory.
- Geotechnical factual reporting compliant with Eurocode 7. This report shall include the contractor's interpretation of the ground conditions with regard to the proposed development's foundations.



Figure 1.2: Proposed Site Investigations Locations

Exploratory holes shall be progressed to the depth given in Table 1.

Exploratory holes must not be terminated without the prior approval of the Investigation Supervisor (RPS).

It is envisaged that the fieldworks will be completed within 10 days followed by laboratory testing and reporting within 6 weeks of the completion of the field works. Overall the proposed timescale for the project will be 8 weeks from commencement to completion. However, this will be subject to client agreement.

Exploratory holes shall be progressed to the between 4-25m (Table 1).

Exploratory holes must not be terminated without the prior approval of the Investigation Supervisor (RPS).

It is envisaged that the fieldworks will be completed within 10 days followed by laboratory testing and reporting within 6 weeks of the completion of the field works. Overall the proposed timescale for the project will be 8 weeks from commencement to completion. However, this will be subject to client agreement.

Table 1: Exploratory Hole Details

Exploratory hole	Target depth (m)	Standpipe Installation	Comments
BH01 – BH03	25.00m	n/a	Target depth is 25m.
V01 – VB12	4.00m	n/a	Vibrocores to be retrieved at each location to a depth of 4m below seabed level.



1.2 Proposed construction

Frequency of Sampling

The following sampling frequency will apply to the boreholes:

- In soft to firm alluvial deposits, open-tube samples are to be taken. In granular material, SPT testing is to be carried out. In stiff boulder clay, alternate open-tube samples and SPT testing. The following spacings should be used:
 - The first sample/test taken at 0.5 m below ground level
 - The next at 1.0 m deeper, thereafter at 1.0 m depth intervals to 5.5 m depth below ground level
 - Then at 1.5 m depth intervals to 25 m depth below ground level
- Where an open tube sample cannot be taken, an SPT is to be carried out.
- Small disturbed samples shall be taken of the topsoil/seabed, at each change in soil type or consistency and midway between successive open-tube samples or SPTs.
- Bulk disturbed samples shall be taken of each soil type and where no sample is recovered with an SPT or U100.

Undisturbed Samples

Open Tube or Piston samples shall be taken using the sampling equipment and procedures as described in BS EN ISO 22475-1 and BS5930:2015. The nominal diameter shall be 100mm.

1.3 Receiving Environment

The receiving environment is restricted to the immediate harbour and adjacent Courtmacsherry Bay. The receiving environment includes the benthos, the benthic, demersal and pelagic fish in the area, marine mammals and to a lesser extent seabirds. Here we only consider the risk to Annex IV species from the marine operations. As part of the proposed site works vibrocoring is most likely to impact on Annex IV Species.

2 | METHODS

The risk assessment was based on a review of the available literature and data sources. Maps of the distribution of cetacean sightings in and adjacent to Courtmacsherry and approaches, were prepared using data from the Irish Whale and Dolphin Group's casual sightings database (IWDG, accessed 31 August 2022) and data from a range of offshore surveys carried out by the IWDG and other sources. Other ETP (Endangered, Threatened and Protected) species recorded incidentally are also presented including data from the National Biodiversity Data Centre (accessed 5 September 2022).



3 | LEGAL STATUS

Irish cetaceans and pinnipeds are protected under national legislation and under a number of international directives and agreements which Ireland is signatory to. All cetaceans as well as grey and harbour seals are protected under the Wildlife Act (1976) and amendments (2000, 2005, 2010 and 2012). Under the act and its amendments it is an offence to hunt, injure or wilfully interfere with, disturb or destroy the resting or breeding place of a protected species (except under license or permit). The act applies out to the 12 nml limit of Irish territorial waters.

All cetaceans, pinnipeds, otter and Leatherback Turtle are protected under Annex IV of the EC Habitats Directive (92/43/EEC). The Directive lists Annex IV species of community interest 'in need of strict protection'. Under this Directive, the harbour porpoise (*Phocoena phocoena*), bottlenose dolphin (*Tursiops truncatus*), grey seal (*Halichoerus grypus*), harbour seal (*Phoca vitulina*), leatherback turtle (*Dermochelys coriacea*) and otter (*Lutra lutra*) are designated Annex II species which are of community interest and whose conservation requires the designation of special areas of conservation.

Ireland is also signatory to conservation agreements such as the Bonn Convention on Migratory Species (1983), the OSPAR Convention for the Protection of the Marine Environment of the northeast Atlantic (1992) and the Berne Convention on Conservation of European Wildlife and Natural Habitats (1979).

In 2007, the National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht produced a '*Code of Practice for the Protection of Marine Mammals during Acoustic Seafloor Surveys in Irish Waters*' (NPWS 2007). These were subsequently reviewed and amended to produce '*Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters*' (NPWS 2014) which include mitigation measures specific to piling. The guidelines recommend that listed coastal and marine activities be subject to a risk assessment for anthropogenic sound-related impacts on relevant protected Annex IV species to address any area-specific sensitivities, both in timing and spatial extent, and to inform the consenting process.

Once the listed activity has been subject to a risk assessment, the regulator may decide to refuse consent, to grant consent with no requirement for mitigation, or to grant consent subject to specified mitigation measures.

4 | BASELINE ENVIRONMENT

4.1 | Ambient Noise Levels

The ambient noise levels at the site are not known. Ambient noise in Courtmacsherry Bay are not known but is expected to be very low with only the occasional fishing vessel and recreational craft using the immediate area.

4.2 | Cetaceans

This risk assessment was based on original data collected by the IWDG and a review of the available literature. The IWDG Sightings dataset, which is validated and updated daily, was accessed (on 31 August 2022) and data over a 10 year period (2012 to 2021) was exported and mapped. Marine mammals are highly mobile and recent advice suggests considering the wider area and the potential for impacts on SACs with marine mammal as qualifying interests up to 100km from these protected areas.



A review of validated cetacean (whale, dolphin and porpoise records) submitted to the IWDG accessed 174 records of cetaceans. Seven cetacean species were recorded with 35 (20.1%) not recorded to species level (Table 2). Surprisingly fin whale was the most frequently recorded with 26.6% of all records, followed by common dolphin (23.7%) and minke whale (23.7%). harbour porpoise, humpback whale, Risso's and bottlenose dolphin were also recorded (Table 2).

Table 2: Cetacean sightings (including IWDG downgrades) recorded in Courtmacsherry Bay and adjacent waters from 2012-2021.

Species	No. sightings	No. individuals	% of records
Fin whale	37	111	26.6
Common dolphin	33	1578	23.7
Minke whale	26	67	18.7
Harbour porpoise	22	94	15.8
Humpback whale	11	19	7.9
Bottlenose dolphin	7	44	5.0
Risso's dolphin	3	13	2.2
Dolphin species possibly harbour porpoise	3	4	8.1
Dolphin species	9	178	7.0
Large whale species	9	19	0.5
Whale sp.	7	16	
Cetacean species	7	24	1.6
Total	186	1416	100

4.2.1 Common dolphin (*Delphinus delphis*)

Common dolphins are distributed around the entire Irish coast with highest concentrations are off the south west and west coasts (Berrow *et al.* 2010). They were the most frequently recorded dolphin species (27% of all records) are frequently recorded in outer Courtmacsherry Bay but rarely enter the harbour (Fig. 2.1) Common dolphins were mainly distributed in the outer bay area (Fig. 2.1).

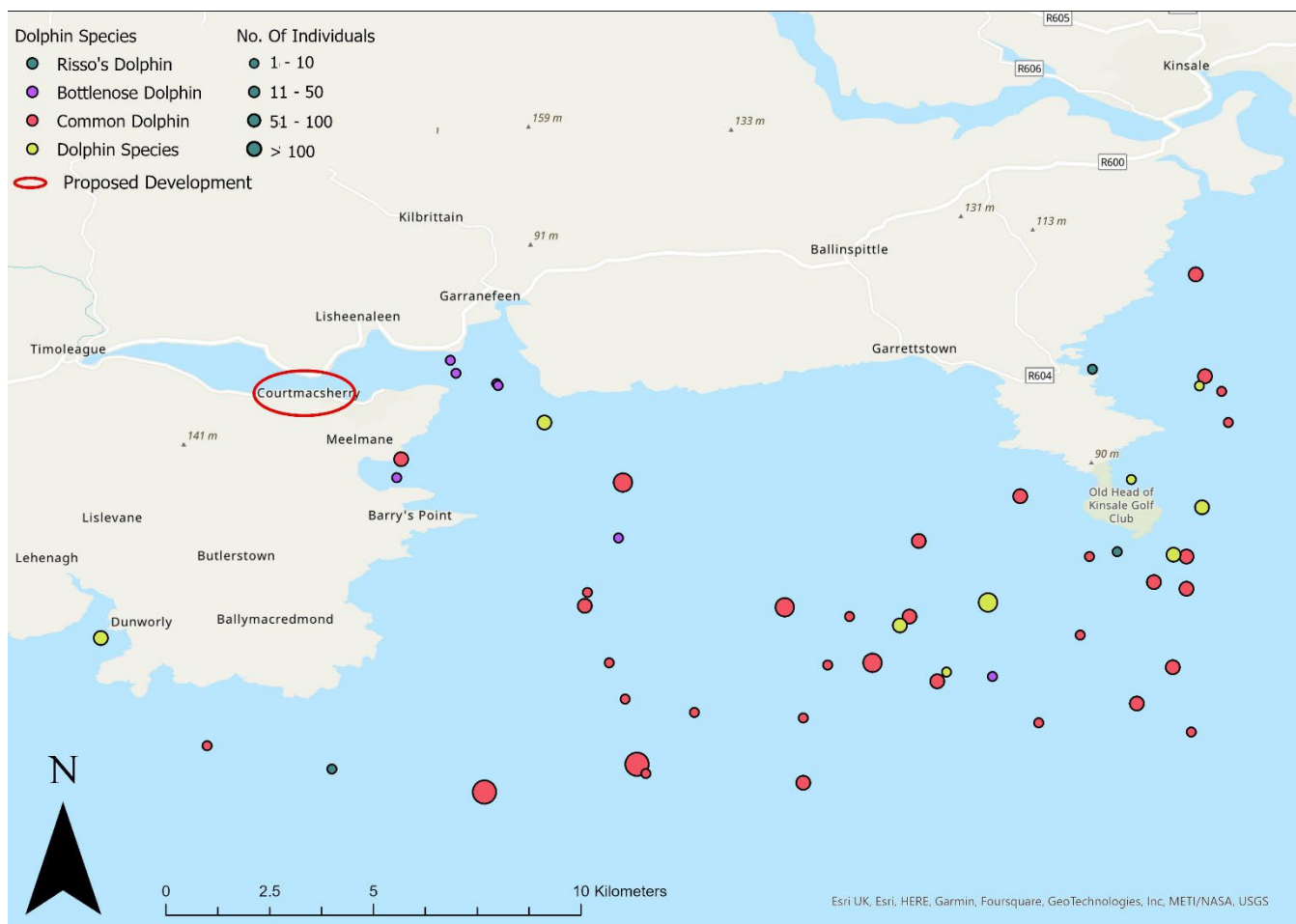


Figure 2.1. Distribution of dolphin species off Courtmacsherry and adjacent waters

4.2.2 Bottlenose (*Tursiops truncatus*)

Bottlenose dolphins only accounted for 5% of all cetacean records (Table 1) but they are the dolphin species most likely to enter the harbour area (Fig. 2.1). This species is however highly mobile and are likely to be part of the inshore population which has been recorded off all Irish coasts (O'Brien *et al.* 2009). They are unlikely to remain in the area for extended periods.

4.2.3 Risso's dolphin (*Grampus griseus*)

There were three sighting records of Risso's dolphin all in the outer bay area (Fig 2.1). Sightings were made during summer months.

4.2.4 Harbour porpoise (*Phocoena phocoena*)

Harbour porpoise are the most widespread cetacean species in inshore Irish waters, with highest abundances in the Irish Sea (Berrow *et al.* 2010). Harbour porpoise were frequently sighted in Courtmacsherry Bay (Fig. 2.3), accounting for 16% of all cetacean records, including at the mouth of the harbour with more sightings during spring and summer. They are known to particularly associate with areas of strong tidal currents for foraging (Berrow *et al.* 2014).

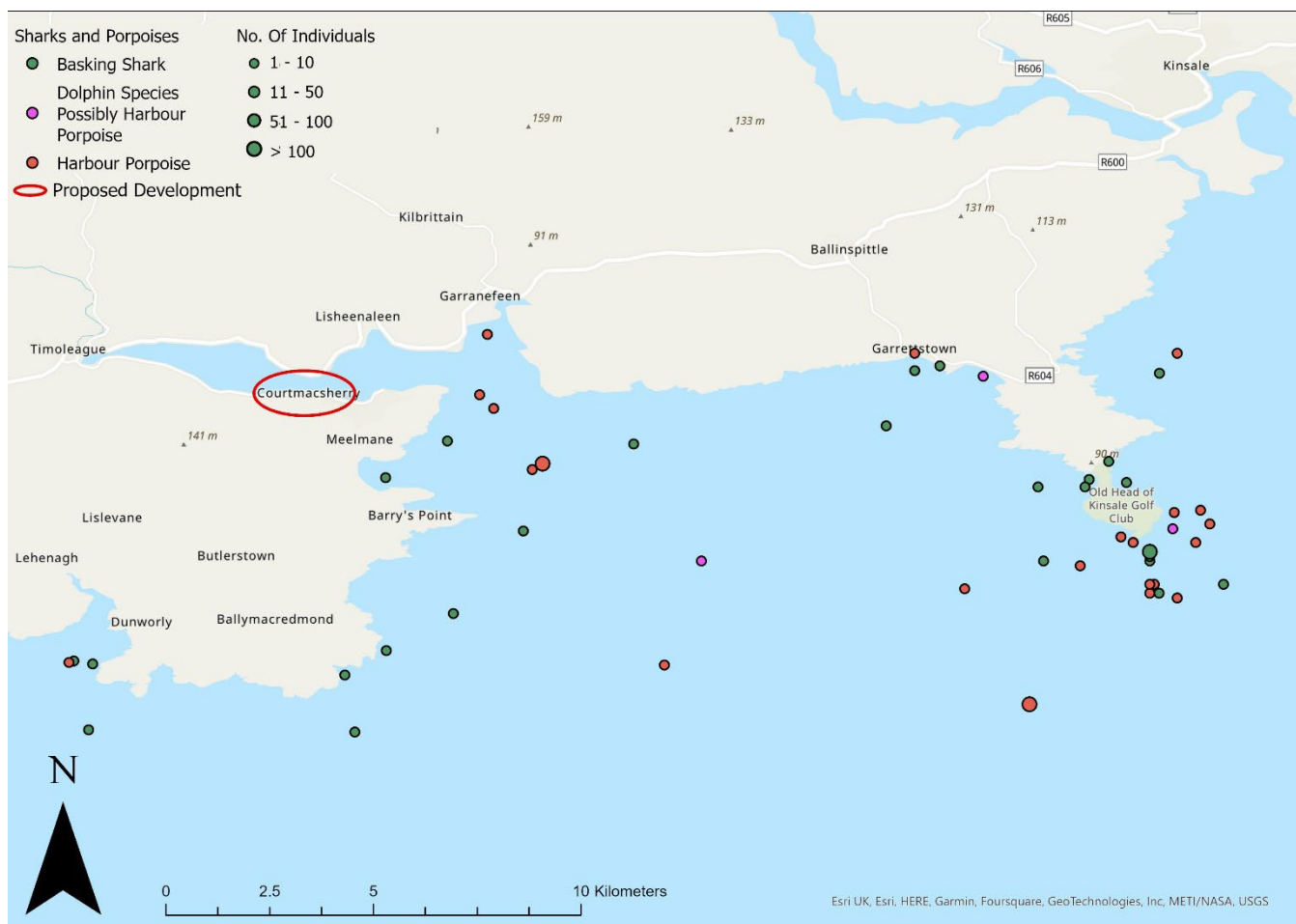


Figure 2.2. Distribution of harbour porpoise off Courtmacsherry and adjacent waters

4.2.5 *Fin whale (Balaenoptera physalus)*

Surprisingly fin whales were the most frequently recorded baleen whale species and indeed the most frequently recorded cetacean species accounting for 26.6% of all records identified to species level (Table 2). However all records are in Courtmacsherry Bay and they do not enter the harbour.

4.2.6 *Minke (Balaenoptera acutorostrata)*

Minke whale with 26 records (18.7%) was the most second frequently recorded baleen whale, occurring during summer months (Fig. 2.3). Sightings were well scattered around the site with some at the entrance to Courtmacsherry Harbour (Fig. 2.3).

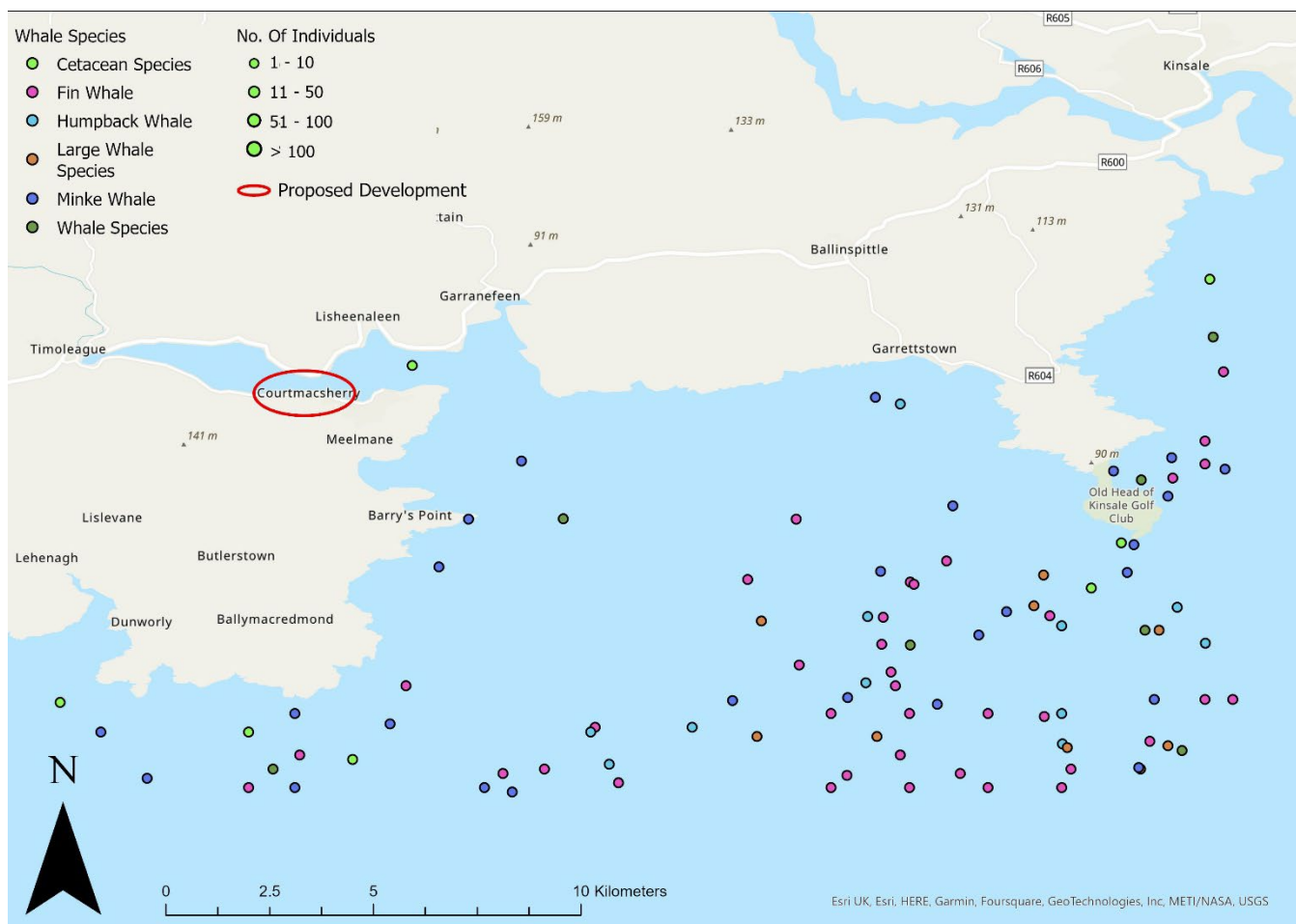


Figure 2.3. Distribution of whale species off Courtmacsherry and adjacent waters

4.2.7 Humpback whale (*Megaptera novaengliae*)

There were 11 sightings of humpback whales accounting for 7.6% of all sighting records. All sightings were in the outer bay and off the Old Head of Kinsale (Fig 2.3)

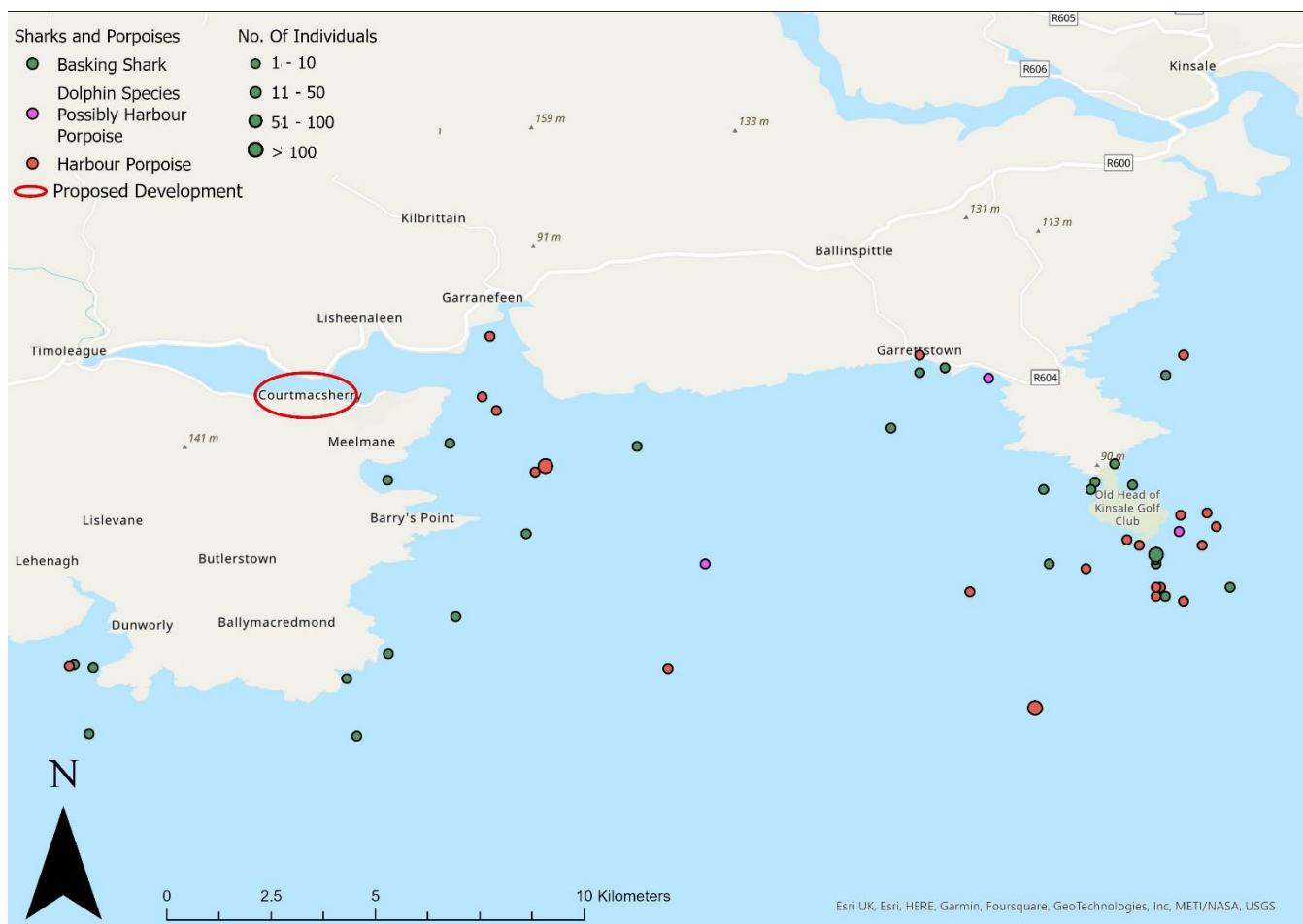
4.2.8 Other ETP species

Other ETP species of interest included the basking shark, marine turtles and rare seal species (Table 3). Basking sharks were observed along the coast and off the Old Head of Kinsale, including at the mouth of the harbour (Fig. 2.4).

A bearded seal was observed hauled out near off Timoleague on 4 August 2017 which is only the second record of this species in Ireland and was clearly a vagrant. A walrus was also observed hauled out in Courtmacsherry Bay on 8 August 2021. Walrus sightings are more common in Ireland but are still rare (Cotton 2007) and both species occurrence in the area of interest must be considered very unusual.

**Table 3. ETP species recorded in Courtmacsherry Bay and adjacent waters from 2012-2021.**

Species	No. sightings	No. individuals
Basking shark	26	79
Bearded seal	1	1
Walrus	1	1
Total	28	81

**Figure 2.4. Distribution of basking shark off Courtmacsherry and adjacent waters**

Leatherback turtles *Dermochelys coriacea* have been recorded regularly off southwest Cork including in Courtmacsherry Bay (Fig 2.5) over the years (Sleeman and Dorman 1984; Dorman 1992), with all records between April to October, peaking in June to September (King and Berrow 2009). Other species of marine turtle such as loggerhead *Caretta caretta* and more occasionally Kemp's Ridley *Lepidochelys kempii* have also been reported from adjacent waters (King and Berrow 2009).

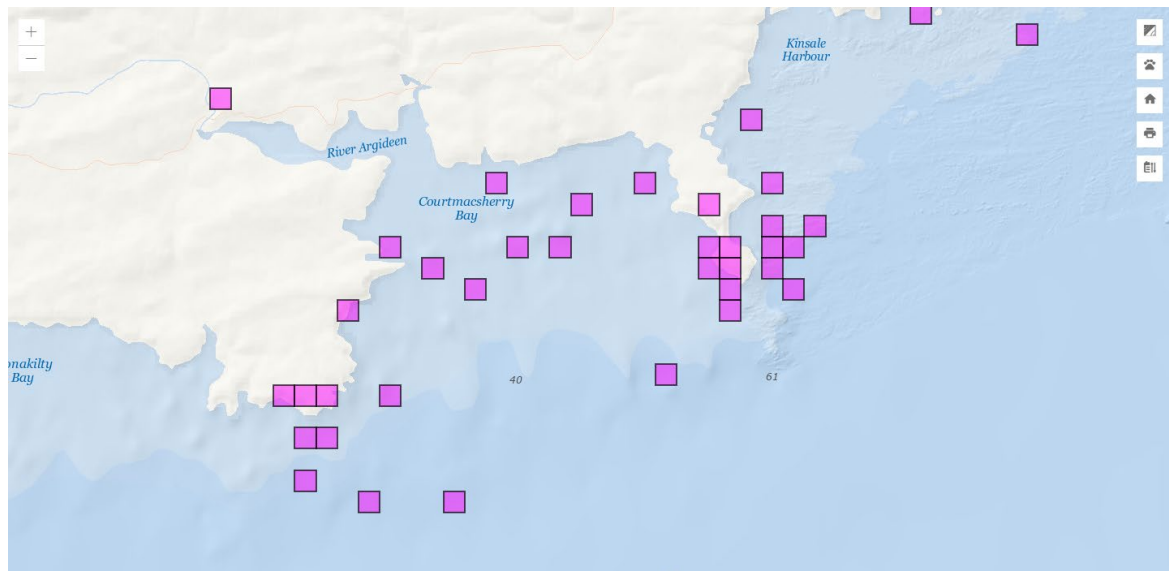


Figure 2.5. Records of leatherback turtle around Courtmacsherry Bay (map courtesy of the National Biodiversity Data Centre).

4.3 | Otter

No site-specific survey of otters was undertaken but it is likely otters occur in good numbers in Courtmacsherry Bay. Reid *et al.* (2013) reported positive occurrence during rapid assessments between 2010 and 2011 with otters occurring at 68% of sites surveyed in the southwest region. Reid *et al.* (2013) categorised the southwest region of Co Cork as having intermediate densities of otters (0-10-0.15 females per km²) compared to other parts of Ireland.

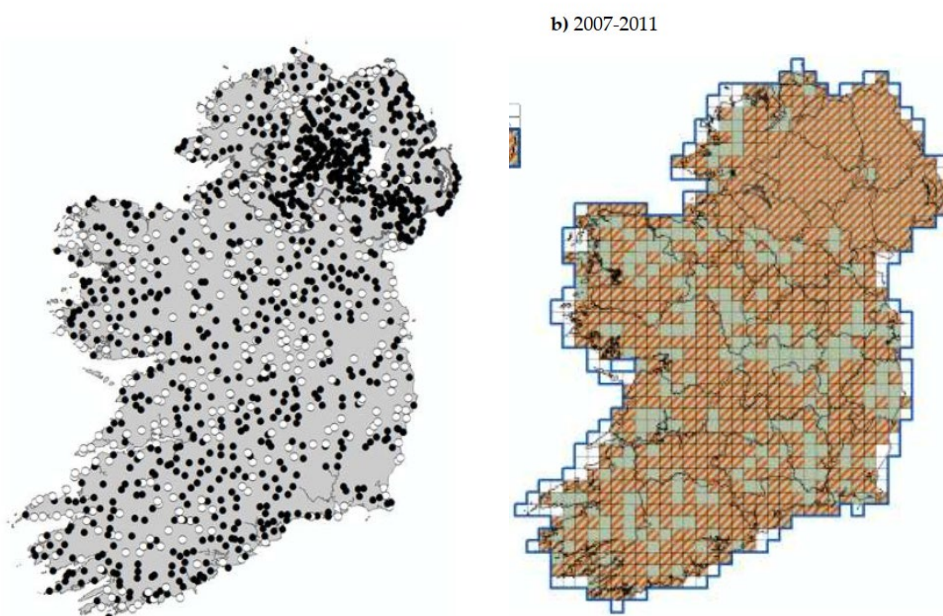


Figure 2.6. Distribution of otters between 2010/11 (from Reid *et al.* 2013)

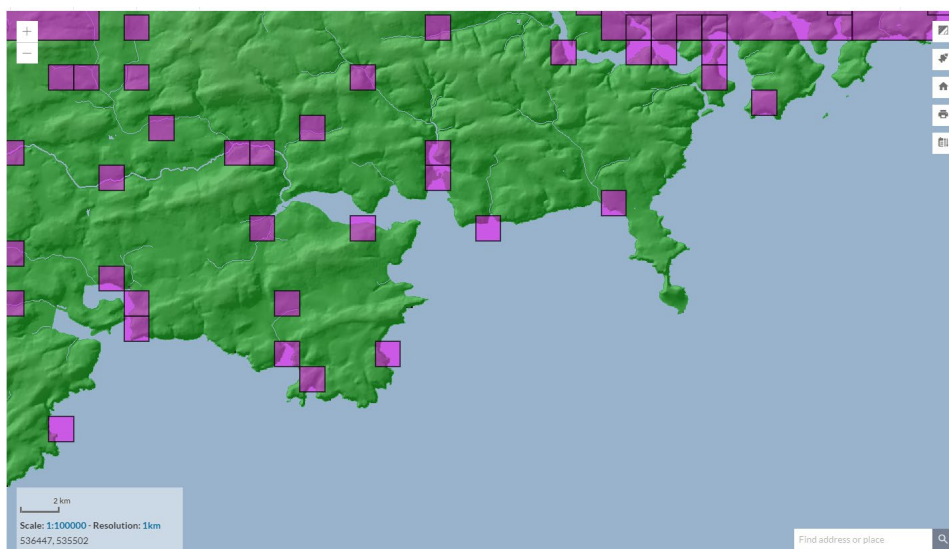


Figure 2.7. Map of otter distribution around Courtmacsherry Harbour (map courtesy of the National Biodiversity Data Centre).

Coastal dwelling otters require access to a freshwater source as they must regularly cleanse their fur of salt as this can affect its insulating properties and therefore their territorial range will be directed by access to freshwater. In Ireland, the territory of female otters is $6.5 \pm 1.0\text{km}$ in coastal environments (de Jongh *et al.* 2010) and for males it may be a larger extent, where for both females and males a total width of coastal water body would be 80m (NPWS, *Lutra lutra* (1355) Conservation Status Assessment Report). Underwater, hearing sensitivity is significantly reduced when compared to sea lions and other pinniped species, demonstrating that otter hearing is primarily adapted to receive airborne sounds (Ghoul *et al.* 2014).

4.4 | Pinnipeds

Grey and harbour seals are distributed around the entire Irish coast with grey seals being more abundant along the western seaboard (Cronin *et al.* 2004; O’Cadhla *et al.* 2007; O’Cadhla and Strong 2007).

Grey Seal (Halichoerus grypus)

There are no recorded grey seal breeding sites in Courtmacsherry Bay (O’Cadhla *et al.* 2007; Morris and Duck 2019), however grey seals have been noted hauled out. Grey seals are regularly observed off the coast (Fig. 2.5) and range long distances while foraging (Cronin *et al.* 2016) and may be expected to be encountered regularly within the harbour.

Harbour or Common Seal (Phoca vitulina)

There were no harbour seal haul-out sites or breeding sites recorded within Courtmacsherry Bay during National Parks and Wildlife Service (NPWS) surveys (Cronin *et al.* 2004; Morris and Duck 2019) though they have occasionally been recorded hauled (Cronin *et al.* 2004). Harbour seals pup in June-July and the moulting period occurs after breeding, starting in June and ending in November, with a peak in mid-September (Cronin *et al.* 2014).

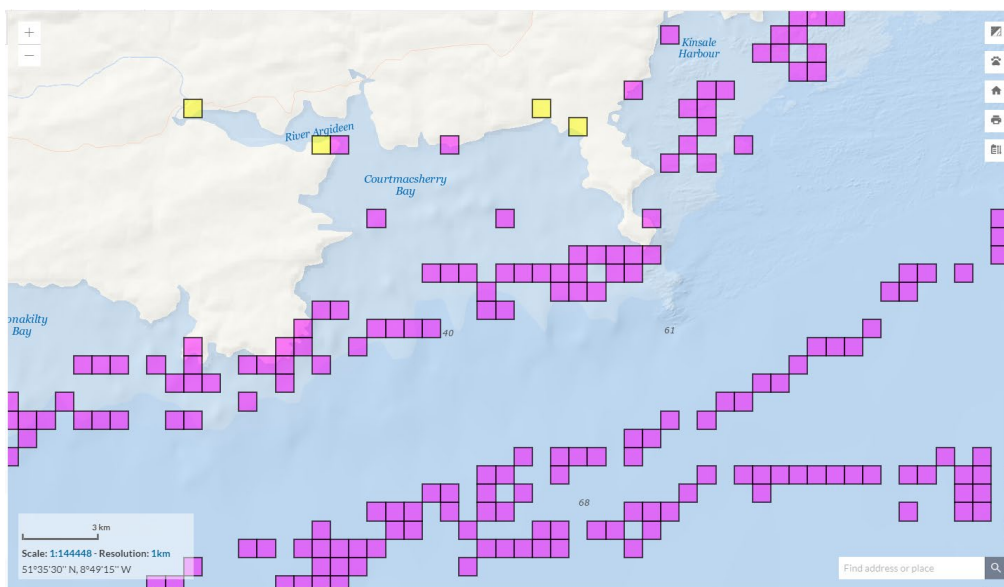


Figure 2.8. Records of grey seals (purple) and harbour/common seals (yellow) around Courtmacsherry Bay (courtesy Harbour (map courtesy of the National Biodiversity Data Centre).

4.5 | Bats

Bats are also protected under the EU Habitats Directive (92/43/EEC). The lesser horseshoe bat which is found in the Republic of Ireland only is listed in Annex II of the EU Habitats Directive, while all bat species are listed in Annex IV of the Directive. This Annex IV Species Risk Assessment has also considered the potential for any impacts from the proposed activities in Courtmacsherry on any of the ten species of bat that are confirmed as resident in Ireland (Kelleher & Marnell, 2006) and have been observed as present on the site.

5 | IMPACT ASSESSMENT

5.1 | Description of Activities

The only relevant marine activity is vibrocore sampling.

- Sampling of sediment from vibrocores for laboratory testing. Environmental samples shall be taken from the vibrocores at the surface, at 0.5m, then every metre, or every change in strata or when contamination is suspected.
- Three (3) boreholes advanced to a depth of 25.00m bgl. The boreholes will be undertaken within the marine/water environment. There may be existing concrete to break through associated with the existing jetty and allowance should be made for this within the Bill of Quantities.

The potential effects of vibrocore sampling on Annex IV species was addressed by assessing the likelihood that Annex IV species would be exposed, or interact, with the activity. Impacts assessed include likelihood of temporary or permanent threshold shift and disturbance from noise emitted during operations. Acoustic disturbance includes the ability of the individual to detect increased noise levels over ambient levels, masking, Temporary Threshold Shift (TTS) and Permanent Threshold Shift (PTS) and behavioural impacts, i.e. resulting in a behavioural change by individuals.



All vibrocore activities will be limited to a short 10 day period.

5.2 | Risk Assessment

The NPWS 'Guidance to manage the risk to marine mammals from man-made sound sources in Irish waters – January 2014' recommends that listed coastal and marine activities, undergo a risk assessment for anthropogenic sound-related impacts on relevant protected Annex IV species to address any area-specific sensitivities, both in timing and spatial extent, and to inform the consenting process. It is required that such an assessment must competently identify the risks according to the available evidence and consider (i) direct, (ii) indirect and (iii) cumulative effects of anthropogenic sound (NPWS 2014).

5.3 | Literature Review of Impacts and Mitigation

Vibrocore is a technology and a technique for collecting core samples of underwater sediments. The vibrating mechanism of the vibrocorer will be powered by two large electrical motors. The nominal frequency of the motors is approximately 50 Hz.

If a marine mammal's received sound exposures, irrespective of the anthropogenic source (pulse or nonpulse), exceed the relevant criterion, auditory injury (PTS) is assumed to be likely. The measured effects on Annex IV species are largely based on work by Southall *et al.* (2007), who proposed a dual criterion based on peak sound pressure level (SPL) and sound exposure level (SEL), where the level that is exceeded first is what should be used as the working injury criterion (i.e. the precautionary of the two measures).

As all marine mammals do not hear equally across all frequencies, the use of frequency weightings is applied to compensate for differential frequency responses of their sensory systems. The M-weighting (for marine mammals) is similar to the C-weighting for measuring high amplitude sounds in humans. At present there are no data available to represent the onset of PTS in marine mammals but Southall *et al.* (2007) estimated it as 6 dB above the SPL (unweighted) and 15 dB above the SEL (M-weighted according to the relevant marine mammal functional group, see Figure 1) based on the onset of TTS. Therefore, Southall *et al.* (2007) proposed SPL criteria of 230 dB re 1 μ Pa (peak broadband level) for PTS onset in cetaceans and 218 dB re 1 μ Pa for pinnipeds. They also recommended TTS can occur at 224 dB re 1 μ Pa (peak broadband level) for cetaceans and 212 dB re 1 μ Pa for pinnipeds (Southall *et al.* 2007). While, the SEL criteria proposed by Southall *et al.* (2007) include TTS onset at 183 dB re 1 μ Pa² -s for cetaceans and 171 dB re 1 μ Pa² -s for pinnipeds, and PTS onset is expected at 15 dB additional exposure (Bailey *et al.* 2010).

Given that the proposed works will be restricted to a small area in Courtmacsherry for a short period (10 days), the sound exposure to cetaceans, marine turtles and otters is very minimal. It is highly unlikely any species other than otters will occur near the site. Even if they did occur, with a sound frequency emitted of 50 Hz, the sensitivities of these species to such low frequency is very low and they will hardly be able to perceive the sound.

It is also concluded that the proposed works will have no impact on the terrestrial Annex IV species, bats as the sound produced will be restricted to the shallow waters around the vibrocore sites.

5.3.4 Indirect impacts on prey

No adverse effects on fish species are expected from vibrocore operations and associated activities as any impacts will be very restricted to the site in Courtmacsherry

5.3.5 Cumulative Effects

There will be no cumulative effects as vibro-coring will be carried out over a 10 day period.

5.5 | Mitigation Measures

No mitigation measures are proposed as the potential impacts are so unlikely and if they do occur will have no impacts.

5.5.1 Disturbance

Due to the low frequency sound emitted (50Hz) and the unlikely occurrence of Annex IV species no disturbance will occur.

5.5.2 Injury and mortality

Due to the low frequency sound emitted (50Hz) and the unlikely occurrence of Annex IV species no injury or mortality will occur.

5.5.3 Disruption of normal behaviors

Due to the low frequency sound emitted (50Hz), short duration and the unlikely occurrence of Annex IV species no disturbance will occur.

5.6 | NPWS Assessment Criteria

1. Do individuals or populations of marine mammal species occur within the proposed area?

The likelihood of cetaceans being in the area is very low. Although a number of cetacean species have been recorded in adjacent areas, their abundance is generally low and they are highly mobile. All cetaceans and seals are part of a larger population and very mobile

2. Is the plan or project likely to result in death, injury or disturbance of individuals?

The project does not have the potential to cause injury or death as potential impacts are very limited and extremely unlikely to occur. .

3. Is it possible to estimate the number of individuals of each species that are likely to be affected?

No abundance estimates for cetaceans in Courtmacsherry Bay or harbour are available but their presence is rare in the harbour although they do occur regularly adjacent to the site.

4. Will individuals be disturbed at a sensitive location or sensitive time during their life cycle?

Vibrocoring may be carried out for a very limited period (10 days) which if it did expose Annex IV species would only be for a very short period.

5. Are the impacts likely to focus on a particular section of the species' population, e.g., adults vs. juveniles, males vs. females?



There is no data to suggest that any particular Annex IV species, gender or age group are more likely to occur in the vicinity of the site compared to other ages/sex and thus all must be expected to occur.

6. Will the plan or project cause displacement from key functional areas, e.g., for breeding, foraging, resting or migration?

While a range of Annex IV species have been reported in Courtmacsherry Bay, they are very rare in the harbour and thus it does not provide any important habitats.

7. How quickly is the affected population likely to recover once the plan or project has ceased?

Any disturbance of marine mammals in the very unlikely event it occurs would be very short term and have no impact.

5.7 | Mitigation

As the potential exposure of Annex IV species to the proposed activities and the potential impact even if they were exposed is so extremely low, no mitigation is required.

5.8 | Residual Impacts

It is very unlikely that there will be negative residual impacts from the proposed marine activities even in the absence of mitigation

6 | SUMMARY

Although sightings of Annex IV species occur frequently within Courtmacsherry Bay and occasionally within the harbour the potential for exposure to, or impacts from, the proposed marine activities is extremely low. Thus we recommend that no mitigation is required in the case of the proposed site investigations by RNLI.

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