MWP

Non Statutory Environmental Report

Foreshore Licence Application for Marine Site Investigation Surveys at Dognose, Corkbeg, Whitegate, Co. Cork

Port of Cork Company

February 2025

Contents

Tables

Figures

Project No.	Doc. No.	Rev.	Date	Prepared By	Reviewed By	Approved By	Status
23686	6002	A	June 2023	RP	AR/MT	PC	ISSUE
23686	6002	B	February 2025	WM	KF	KF	ISSUE

MWP, Engineering and Environmental Consultants
Address: Reen Point, Blennerville, Tralee, Co. Kerry, V92 X2TK
www.mwp.ie

1. Introduction

The Port of Cork Company (PoCC) ('the Applicant') is submitting a Foreshore Licence Application (FLA) for Marine Site Investigation (SI) Surveys (hereafter referred to as the 'proposed works') at Dognose Bank, Corkbeg, Whitegate, Co. Cork (hereafter referred to as 'proposed works site') to the Foreshore Section of the Department of Housing, Local Government and Heritage (DoHLG&H).

The Foreshore Licence Application Area (FLAA) lies just south of the boundary of Cork Harbour Special Protection Area (SPA) (Site Code: 004030) and is located within 15km of one other Natura 2000 site namely Great Island Channel Special Areas of Conservation (SAC) (Site Code: 001058). As the project is not directly connected with or necessary to the management of the Natura 2000 sites, it is regarded as necessary that the project should be subject to the Appropriate Assessment (AA) process. A Supporting Information for Screening for Appropriate Assessment (SISAA) Report has been prepared for the Applicant in support of this process.

This Non Statutory Environmental Report (NSER) has been undertaken by an environmental consultant from MWP.

The FLA is being sought solely to facilitate SI works associated with the future port infrastructure identified in the recently launched Port of Cork Masterplan 2050, and in particular Offshore Renewable Energy (ORE).

1.1 Subject Site Location

The marine SI works proposed by the Applicant, will be undertaken at Dognose Bank, Corkbeg, Whitegate, Co. Cork. See Figure X for site location in context of Cork Harbour. The FLAA is circa 98.20 hectares (ha) and is located approximately 1.6km west of Whitegate village (**Figure 1-1**). **Figure 1-2** shows the FLAA map and indicative sample locations.

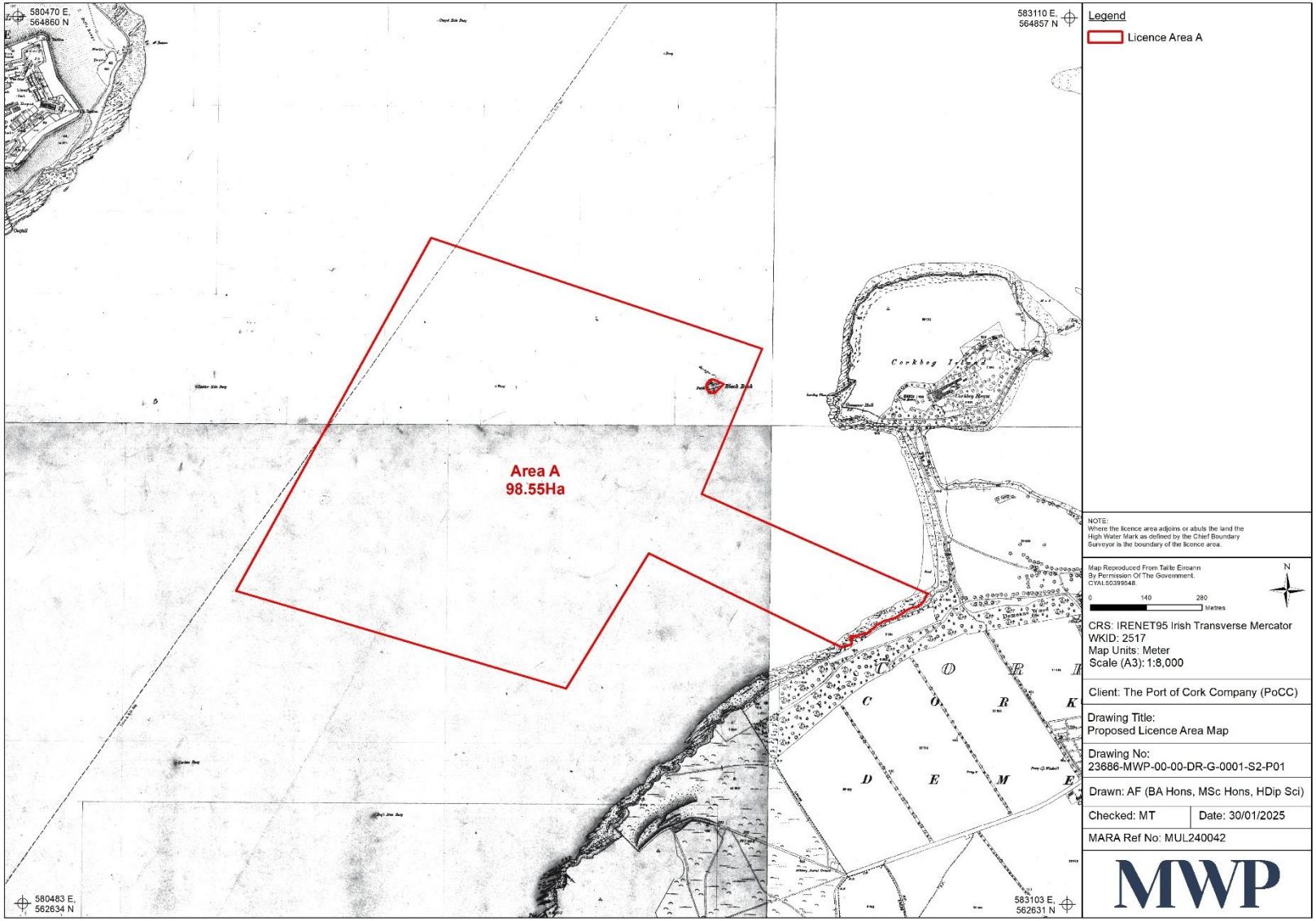

Figure 1-1: Location of proposed works

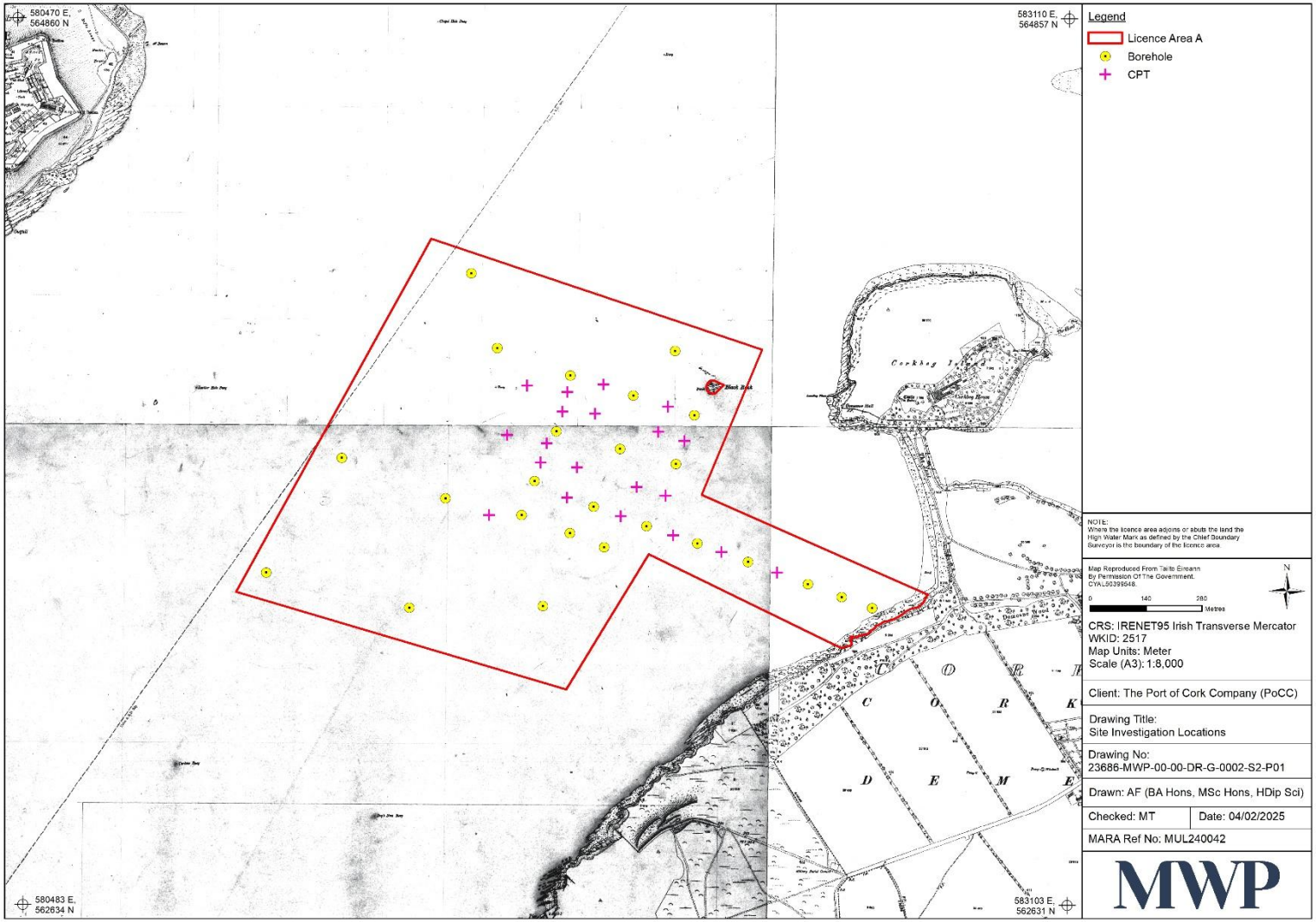

Figure 1-2: FLA Map and Indicative Sample Locations

1.2 Aim of this Report

This document has been prepared to provide information to support the determination of a Foreshore Licence. This document provides a high-level characterisation of the environmental baseline within the FLAA and surrounding area and identifies any potential environmental sensitivities in the region.

A SISAA report has been completed to inform the AA process in determining whether the proposed site investigations, either alone and/or in combination with other plans or projects, are likely to have a significant effect on any Natura 2000 sites.

This document provides the following:

- Description of the proposed site investigations;
- Environmental baseline and appraisal of environmental sensitivities in the region; and
- Assessment of potential effects of the proposed site investigations including any proposed mitigation to reduce the significance of effects.

1.3 Project Overview

The proposed marine SIs (geophysical surveys, geotechnical survey, environmental surveys (including sub-tidal benthic and subtidal video surveys), intertidal benthic survey and marine mammals survey) will enable:

- Detailed mapping of nearshore shallow geological and seabed character;
- Reconnaissance level mapping of seabed relief and features (e.g. archaeology);
- Greater understanding of the seabed and sub-seabed conditions;
- Evaluation of the nature and mechanical properties of the superficial seabed sediments along the survey corridor;
- Aid in the classification of submerged habitats;
- Greater understanding of bird, marine mammal and reptile distribution and abundance; and
- Baseline environmental mapping (i.e. habitats and species).

The knowledge gained from the proposed site investigation will be used to minimise uncertainty in ground conditions at an early design stage.

Data acquired during the proposed SIs will be used to inform design of any future projects in the area as well as to inform environmental appraisals carried out in support of any consent application by providing information on the baseline environment and allowing impacts to be predicted, and subsequently appropriate mitigation to be developed as applicable. The results of the proposed SIs may also be used at a later date to provide a baseline against which to monitor post construction effects of construction, operation and decommissioning.

1.4 Description of the Proposed Site Investigation Works

This section provides a high-level overview of the proposed SIs. Full details on the scope of the proposed site investigations is provided within the Scope of Survey Works document submitted in support of this FLA. The intention is to commence the proposed site investigations as soon as feasible following award of a Foreshore Licence, taking into consideration any proposed mitigation requirements. The exact mobilisation dates for the SI activities will not be known until a Foreshore Licence has been secured and the process of procuring the contractor is complete. Most survey activities will only occur over a period of weeks. The time spent at each

individual location will be a maximum of two to three days for site investigation activities such as boreholes, Cone Penetrometer Tests (CPTs), grab sampling etc.

The following survey works are planned:

1.4.1 Geophysical Survey

This consists of sub bottom profiler single channel seismic reflection, underwater multichannel analysis of surface waves (UMASW) and seismic refraction surveys. These non-invasive surveys are likely to take 3 weeks to complete and the interpretation of the geophysical survey will form the basis of the scope of work for geotechnical surveys.

1.4.2 Geotechnical Survey

The purpose of the geotechnical survey is to evaluate the nature and mechanical properties of the superficial seabed sediments along the survey corridor. Approximately 20 boreholes (cable percussive with rotary follow-on) and 20 CPTs will be required in total, along with associated sampling and laboratory testing. The exact location of the geotechnical sampling, within the survey corridor will be determined following interpretation of the geophysical. Indicative locations are outlined in **Figure 1-2.** The intrusive investigation works are likely to take 12 weeks to complete.

1.4.3 Environmental Surveys

Sub-tidal benthic and sub-tidal video surveys:

Benthic habitats have a year-round survey period. The epifauna survey period is between April and the end of September. If deemed necessary algal species will be surveyed with the May – August survey period.

- Sub-tidal Benthic Survey: used to sample for marine habitats and fauna. Van-Veen grab taken for benthic faunal analysis aid in the classification of submerged habitats; and
- Sub-tidal Video survey: provides footage to aid in the classification of submerged habitats. This is a non-invasive survey for habitats and fauna.

Intertidal Benthic Survey:

A series of cores will be taken in the soft sediment intertidal sections of the survey area. At each site typically 1) a single stove-pipe core (19cm Ø) is taken for macrofaunal analysis, 2) A single sediment scrape is taken from the sediment surface for Particle Size Analysis (PSA) and Loss on Ignition (LOI) and; 3) a photographic record is taken. Notes of sediment type and obvious epibenthos will be recorded. Survey period is usually April to the end of September.

Marine mammal surveys:

Marine mammals are typically surveyed for the shoreline via vantage point surveys. The surveyor uses a telescope and binoculars to scan the study area. This survey will be supplemented by an underwater acoustic survey. Surveys for marine mammals may occur year-round taking account of species-specific movements. An Annex IV Species Risk Assessment for the proposed SI works has been undertaken by Dr Simon Berrow of the Irish Whale and Dolphin Group (IWDG). Mitigation is recommended through provision of a Marine Mammal Observer (MMO) during geophysical and geotechnical activities to comply with NPWS (2014) guidelines. Mitigation to reduce impacts on Annex IV cetacean species is outlined for the proposed works and if implemented will result in no significant impacts on marine mammals.

Indicative locations of boreholes a CPTs are provided in **Figure 1-2.** It has been assumed that the geotechnical and geophysical surveys will be conducted across the whole of the FLAA.

2. Environmental Sensitivities

An understanding of the potential effects of an operation on the environment requires a clear understanding of the present state of the environmental baseline. For the purposes of this report, this section focuses on the environmental receptors which have the potential to be affected by the proposed site investigations. The description of the environment is based on publicly available data sources, as referenced in the text.

2.1 Protected Sites

In accordance with the provisions of Article 6(3) of the EC Habitats Directive (92/43/EEC) transposed into Irish statute by the European Communities (Birds and Natural Habitats) Regulations 2011, SI 477/2011, a SISAA Report has been conducted and is presented along with the application form. The SISAA concludes that the Natura 2000 sites within the zone of influence of the proposed works will not be significantly impacted by the proposed project at Dognose Bank, Corkbeg, Whitegate, Co. Cork

Natura 2000 sites (Special Areas of Conservation (SACs) and SPA within the Zone of Influence (ZoI) of the FLAA are shown on **Figure 2-1** and are listed in **Table 2-1**. Only SACs with marine components have been screened for AA.

Table 2-1: Natura 2000 sites within ZoI of the FLAA

No	Natura 2000 Site Name	Site Code	Proximity of Site to Nearest Point of Natura 2000 site
1.	Cork Harbour SPA	(004030)	This SPA is located approximately 0.3km north of the FLAA
2.	Great Island Channel SAC	(001058)	This SAC is located approximately 5.3km north of the FLAA.

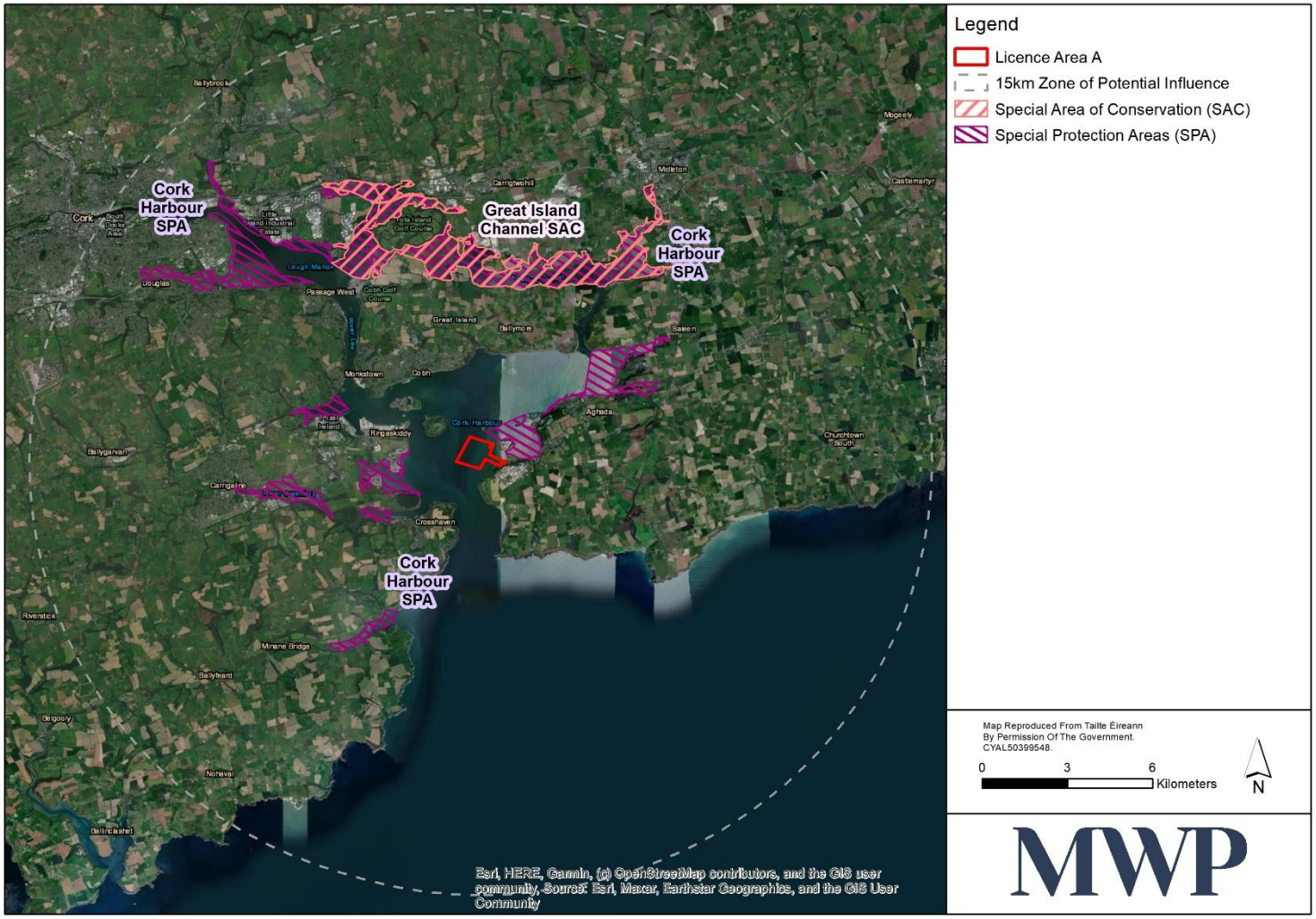

Figure 2-1: Natura 2000 Sites within the zone of potential influence (15 km radius buffer indicated

2.2 Marine Physical Processes

The proposed surveys will lead to a temporary increase in suspended sediment concentrations during the ground intrusive surveys (benthic ecology and geotechnical surveys). However, due to the short-term temporary nature of the surveys, and the small footprint of seabed where the disturbance will occur, suspended sediment concentrations are expected to rapidly return to background levels rapidly due to dispersal through tidal currents. Although there will be a temporary increase in suspended sediment concentrations, elevations are still expected to be lower than concentrations that would occur naturally in the water column during storm conditions. Therefore, no significant impacts are expected to the sedimentary regime due to the proposed surveys.

The proposed surveys will lead to small indents in the seabed where the boreholes and grab samples were collected however they will be minor in scale and localised and will become infilled through natural sedimentary processes. Therefore, no impacts to bathymetry are expected.

In relation to the wave and tidal regime, there will be no permanent structures on the seabed and due to the small scale and temporary nature of monitoring and survey equipment that would have contact with seabed no impacts are expected to the wave and tidal regime.

2.3 Benthic Ecology

Based on data obtained from the European Nature Information System (EUNIS) habitat classification system the sediment at the FLAA along the Cork coast is fully located in seawaters and the substrate is listed as “seabed”.

EMODnet seabed habitat data shows that the FLAA is characterised by the following habitats (**Figure 2-2**):

- Atlantic and Mediterranean high energy circalittoral rock: this habitat occurs on extremely exposed to exposed circalittoral bedrock and boulders subject to tidal streams. Typical fauna include sponges such as *Pachymatisma johnstonia, Halichondria panicea, Esperiopsis fucorum* and *Myxilla incrustans*. Barnacle *Balanus crenatus* is recorded in high abundance on rocky substrata and *Alcyonium digitatum* is present on rocky outcrops (EMODnet, 2022); and
- Atlantic and Mediterranean high energy infralittoral rock: this habitat is exposed to extremely exposed wave action or strong tidal streams. The rock supports a community of kelp *Laminaria hyperborea* with foliose seaweeds and animals. The sublittoral fringe is characterised by dabberlocks *Alaria esculenta*.

There is one SAC designated for benthic habitat within Cork harbour:

- Great Island Channel SAC (located approximately 5.3km north of the FLAA within Cork Harbour). This SAC is designated for mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows.

The proposed surveys have the potential for effect on benthic habitats through the following:

- Physical damage, disturbance and sediment removal;
- Increased suspended sediments and sediment re-deposition leading to smothering;
- Accidental pollution event leading to toxic contamination; and
- Introduction of invasive species from the vessels hull leading to non-toxic contamination.

The proposed surveys are short term and temporary in nature meaning any indirect impacts will not occur over a long period of time and will cease once the surveys have stopped. Direct impacts from disturbance are limited to the benthic grab samples and CPT and core sample locations, therefore the spatial scale of direct disturbance is relatively small in the context of the wider offshore area where similar habitats are present. Indirect effects from suspended sediment increase and re-deposition are also spatially limited. Any smothering would be a very thin

layer within the vicinity of the sample locations due to the small volumes of sediment removed during sampling. Therefore, no significant impacts are expected in relation to benthic ecology due to physical disturbance and removal, increased suspended sediment and re-deposition caused by the proposed surveys.

The intertidal surveys do not overlap with any SACs or SPAs and will be of short duration (up to 1 day per survey location). Any small areas of sediment dug-over in the intertidal area will be quickly infilled following cessation of the disturbance.

During the proposed surveys, there is the potential for pollution from spills or leaks of fuel and oil. The risk of this arising can be minimised by following standard pollution prevention and best practice requirements, which is detailed further in Section 2.11. As such, it is considered that there will be no likely impacts to benthic ecology in relation to accidental pollution events.

There is also the potential for the introduction of invasive non-native species (INNS) during the proposed surveys via survey vessels which could impact benthic ecology receptors. The risk of spreading INNS will be reduced by employing biosecurity measures in accordance with the following requirements:

- International Convention for the Prevention of Pollution from Ships (MARPOL). The MARPOL sets out appropriate vessel maintenance; and
- The International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), which provide global regulations to control the transfer of potentially invasive species.

In addition, the following will be adhered to:

- The European Communities (Environmental Liability) Regulations 2008, which set out a polluter pays principle where the operators who cause a risk of significant damage or cause significant damage to land, water or biodiversity will have the responsibility to prevent damage occurring, or if the damage does occur will have the duty to reinstate the environment to the original condition.

With compliance with these requirements, it is not expected that invasive species will be introduced, therefore there are no likely impacts expected to benthic ecology in relation to INNS.

Overall due to the scale and nature of the proposed surveys, it is not expected there will be an impact to benthic ecology receptors. Additionally, the SISAA considered impacts to sites designated for benthic ecology receptors, concluding there would be no likely significant effect on the designated benthic features of SACs.

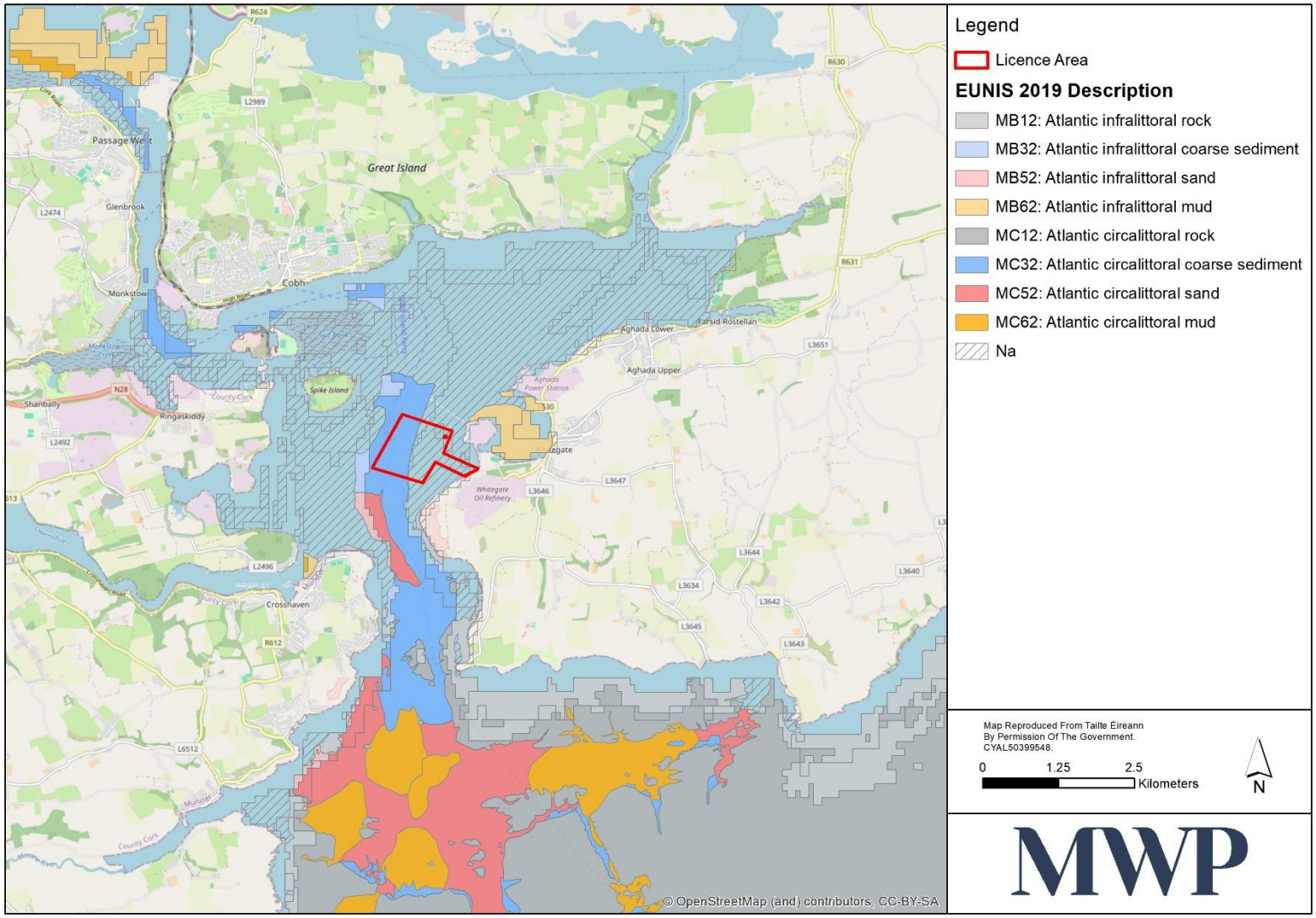

Figure 2-2: EMODnet seabed habitats surrounding the FLAA (Source: https://emodnet.ec.europa.eu/geoviewer/).

2.4 Fish and Shellfish Ecology

Data from the Marine Institute's Ireland's Marine Atlas[1] shows there are a number of species with spawning and nursery grounds overlapping the FLAA. The spawning and nursery grounds overlapping the FLAA are listed below and shown in **Figure 2-3** to **Figure 2-7:**

- Cod *Gadus morhua* nursery grounds;
- Atlantic Herring *Clupea harengus* spawning and nursery grounds;
- Whiting *Merlangius merlangus* spawning and nursery grounds;
- Horse Mackerel *Trachurus trachurus* spawning and nursery grounds;
- Mackerel *Scomber scombrus* nursery grounds.

There are a number of rivers on the south and east coast of Ireland which have been designated as SACs for Annex II migratory fish. Although these SACs are not marine, the migratory fish for which they were designated have a marine phase of the lifecycle. These species rely on the sea to migrate to feeding grounds before returning to rivers to spawn. The following lists the species from SACs in Ireland and the times of year of their migrations:

- Sea lamprey *Petromyzon marinus* – late April to early June;
- River lamprey *Lampetra fluviatilis* – September to June;
- Twaite shad *Alosa fallax* – year-round and migrate into rivers from April-July; and
- Atlantic salmon *Salmo salar* – May to June and autumn months.

Data available from the Department of Aquaculture, Food and the Marine (DAFM) as provided on the Marine Institute's, Ireland's Marine Atlas shows that there are no aquaculture operations within the proposed FLAA and the survey site is not located within any designated Shellfish Waters. There are a number of designated Shellfish Water sites and Aquaculture Sites in Cork Harbour (**Figure 2-8**). The nearest Aquaculture site is located approximately 1.1 km north east of the FLAA at Cork Harbour - Atlantic Shellfish Ltd (ID number T05/002OFO). The nearest shellfish water (Rostellan West, Site Code: IE_SW_060_0000) is located approximately 3.8 km northeast of the FLAA.

The closest SAC to the survey site is the Great Island Channel SAC which is approximately 5.3km north of the FLAA and the qualifying interests does not include the four species listed above.

Basking shark *Cetorhinus maximus* is a 'protected wild animal' under Section 23(2)(a) of the Wildlife Act 1976, entitled the "Wildlife Act 1976 (Protection of Wild Animals) Regulations 2022." There are currently no population estimates for basking sharks in Ireland, largely because no measurable data sets exist to indicate population expansion or contraction trends. There is also no research on the behavioural/feeding habits of basking sharks within Irish coastal waters, their spatial and temporal distributions or the major factors influencing these practices (Speedie, 2003). A public sightings scheme was established in Ireland (1993) reported a total of 425 individual basking sharks in one year of observation, encompassing all Irish coasts (Berrow & Heardman, 1994). Data on distribution from MarLIN (Wilding *et al.,* 2020) has records for basking shark all around the Irish coast, therefore there is potential for them to be present in the FLAA.

The proposed surveys have the potential for effects on fish and shellfish ecology through the following:

- Habitat loss / disturbance from the benthic and geotechnical surveys;
- Increased suspended sediments and sediment re-deposition leading to gill damage or barrier effects;

[1] https://atlas.marine.ie/

- Impacts from underwater noise generated during the geophysical surveys;
- Vessel collision (basking sharks); and
- Accidental pollution event leading to toxic contamination.

Disturbance to supporting habitats of fish and shellfish and removal of sediment from sampling surveys will be localised to the immediate vicinity of the sediment sampling location. Suspended sediment plumes and changes to seabed characteristics are expected to be localised and negligible in comparison to natural sediment transport, rapidly returning to natural background levels.

The site investigation surveys from the vessel and geophysical survey could cause underwater noise within the immediate vicinity of the survey vessel. This underwater noise could potentially affect fish sensitive to noise and act as a barrier that could impede migration pathways (note that basking shark is an elasmobranch (sharks and rays) which is a group with generally low sensitivity to noise vibrations due to the fact they do not have swim bladder (Popper *et al.,* 2014; NatureScot, 2020) and noise disturbance is not expected to impact them). However, due to the fact that sound sources from the survey will not consist of significant rapid pressure changes and considering the distance offshore and short-term temporary nature of the surveys, no significant impacts are expected in relation to fish and shellfish ecology due to the generation of underwater noise.

Vessel collision also poses a threat to slow-moving species and basking sharks have a medium sensitivity to collision (NatureScot, 2020). Collision risk increases with increasing vessel speed; as the survey vessels will be moving slowly, collision risk is generally low. The survey vessels are small and slow thus any animals in the area would have sufficient time to avoid any collisions and thus injury or mortality. Collisions are extremely unlikely due to the small size and slow speed of the survey vessel.

During the proposed surveys, there is the potential for pollution from spills or leaks of fuel and oil. The risk of this arising can be minimised by following standard good practice, and as required by law, with regard to pollution prevention guidance, which is detailed further in Section 2.11.

Overall due to the scale and nature of the proposed surveys, it is not expected there will be likely significant effects on fish and shellfish ecology. Additionally, the SISAA report considered impacts to Annex II migratory fish species, and concluded there would be no likely significant effect to any Annex II fish species.

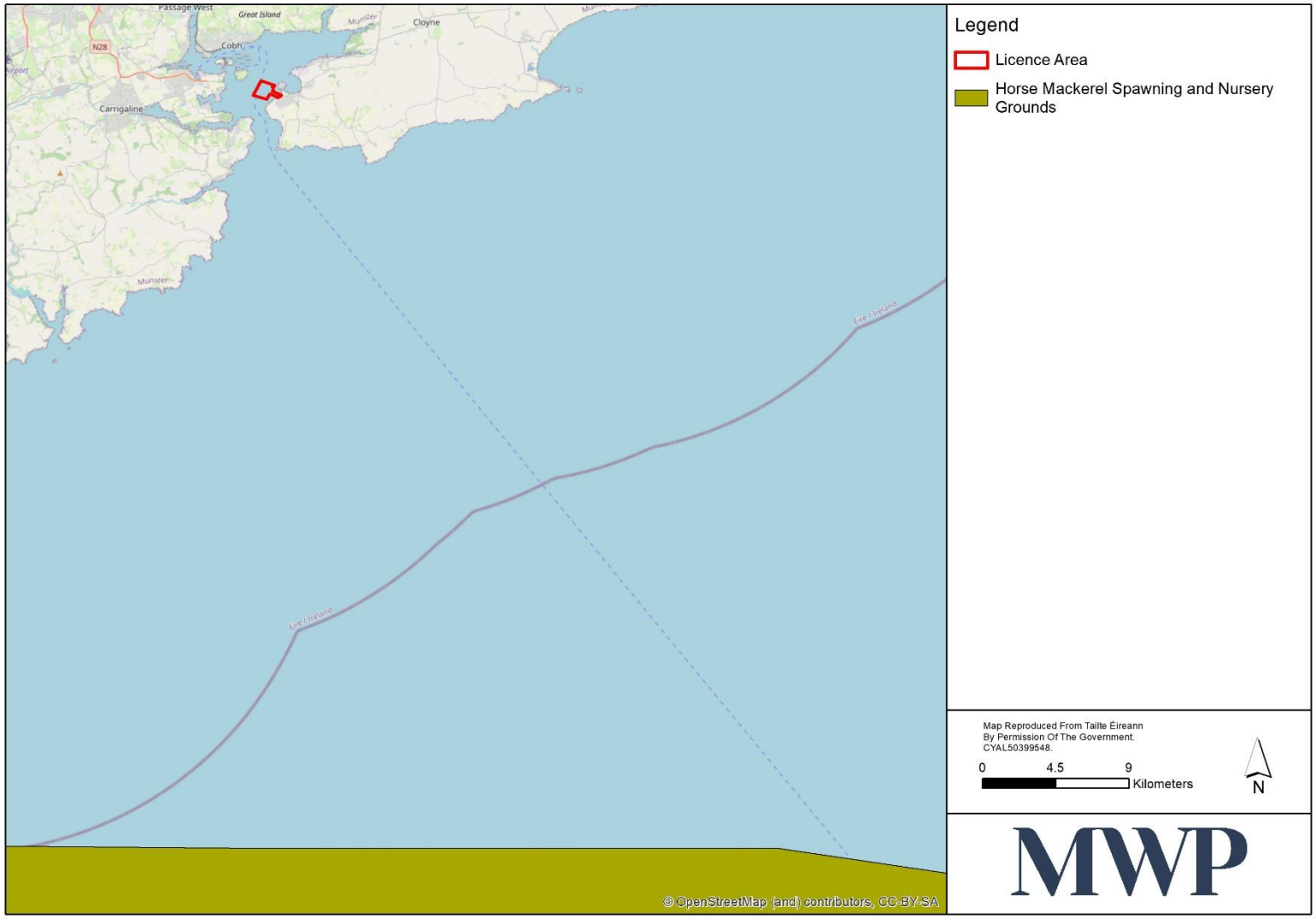

Figure 2-3: Horse Mackerel Spawning and Nursery Grounds (source: https://atlas.marine.ie/)

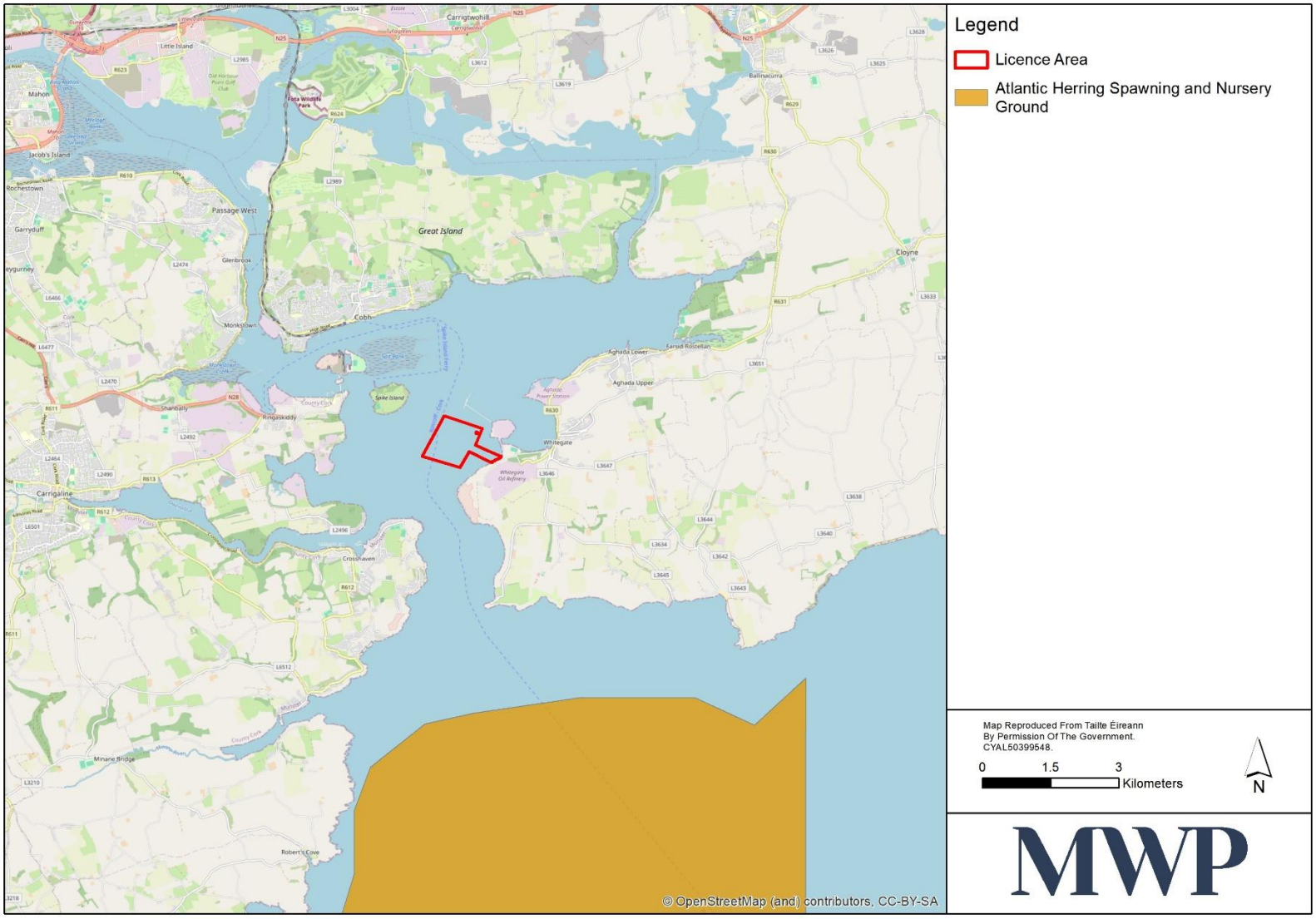

Figure 2-4: Atlantic Herring Spawning and Nursery Ground (source: https://atlas.marine.ie/)

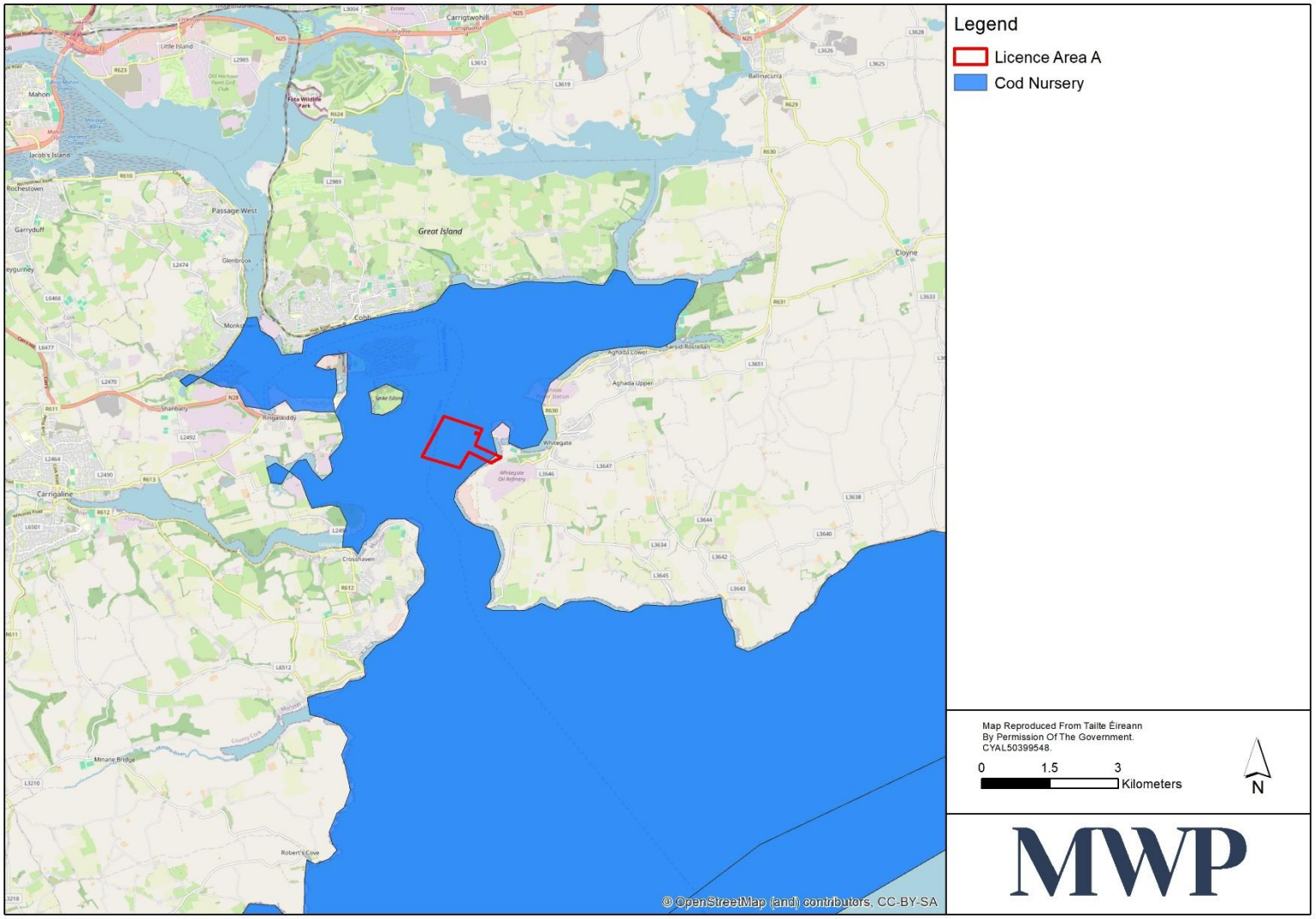

Figure 2-5: Cod Nursery Ground (source: https://atlas.marine.ie/)

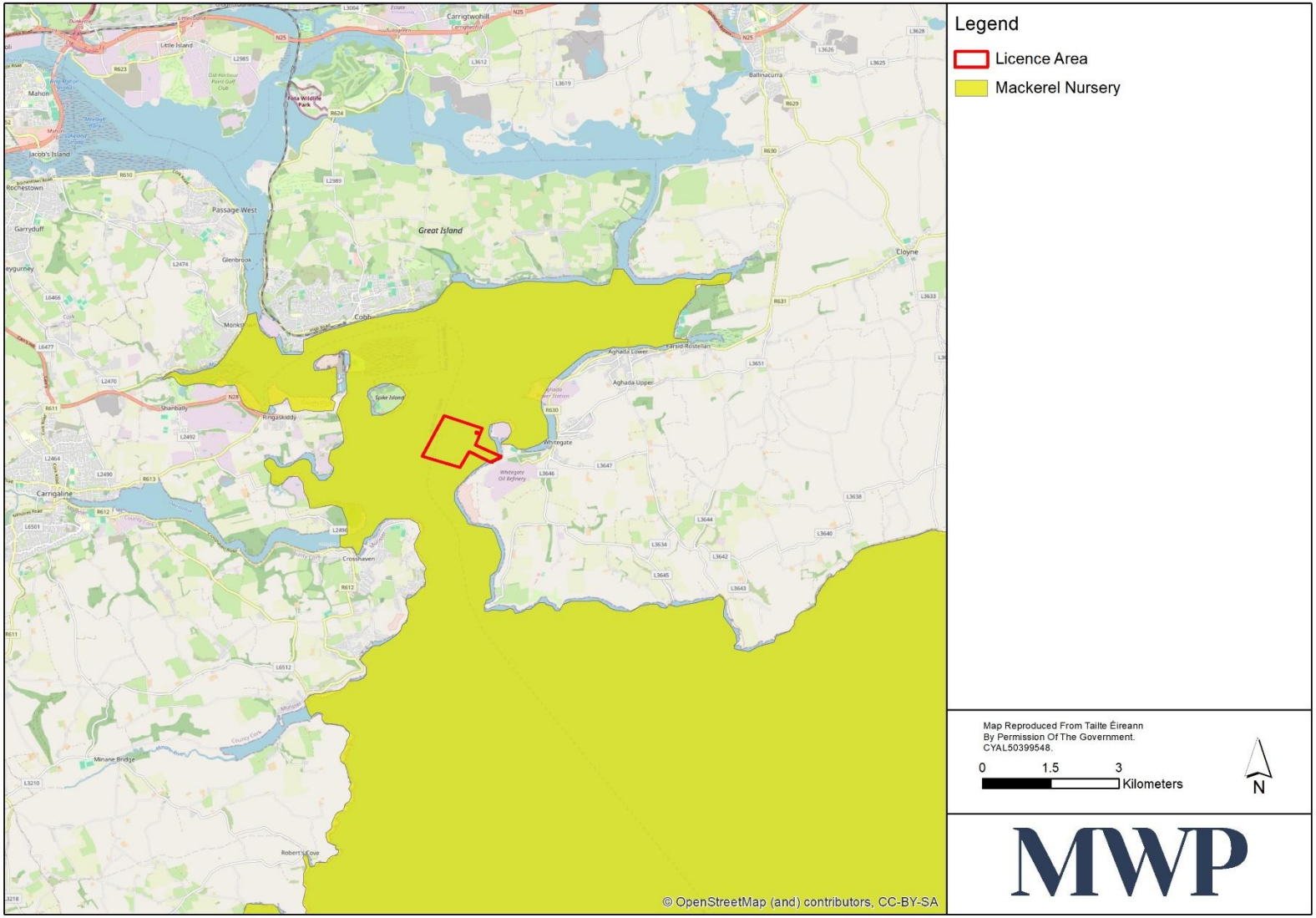

Figure 2-6: Mackerel Nursery Ground (source: https://atlas.marine.ie/)

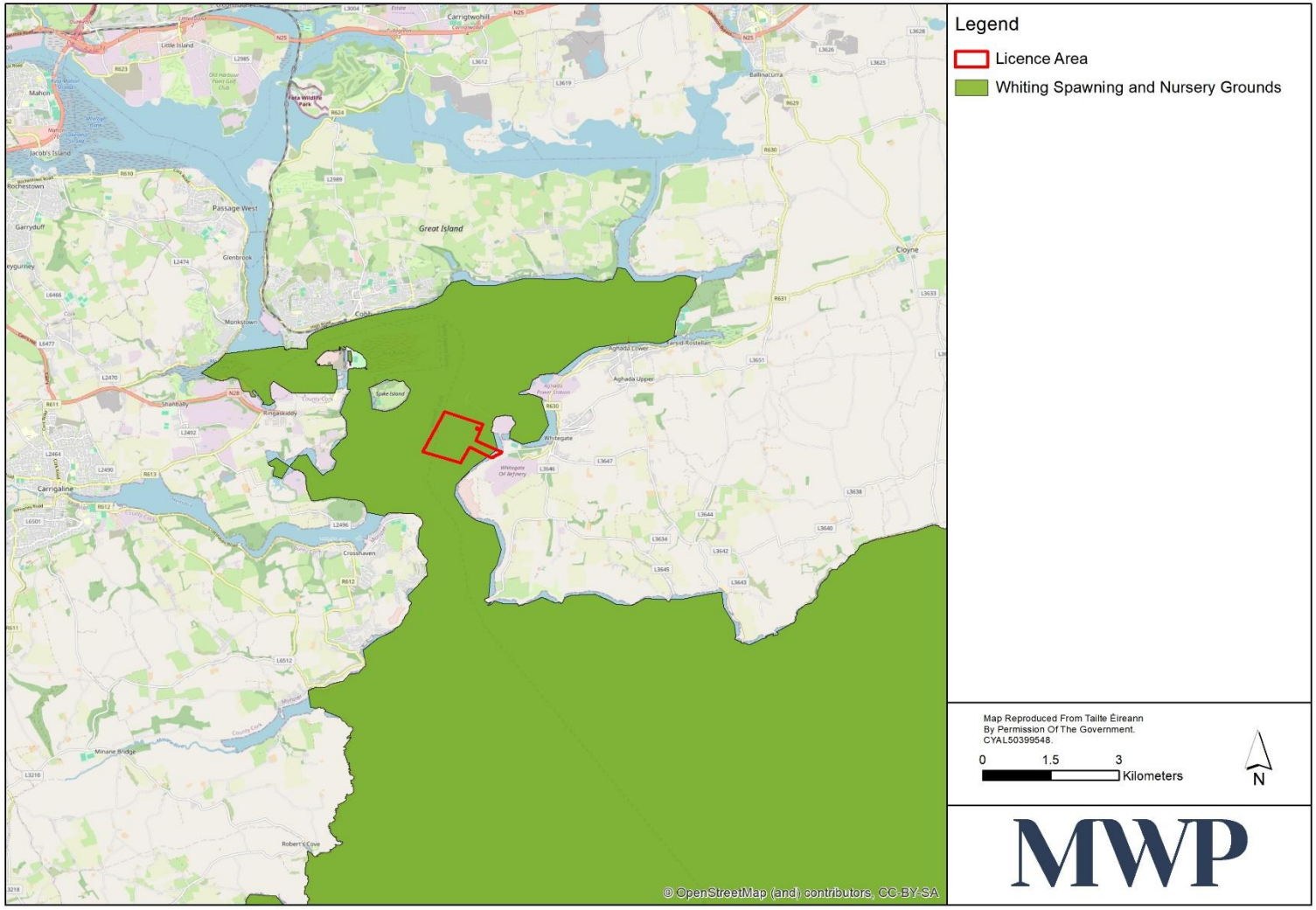

Figure 2-7: Whiting Spawning and Nursery Grounds

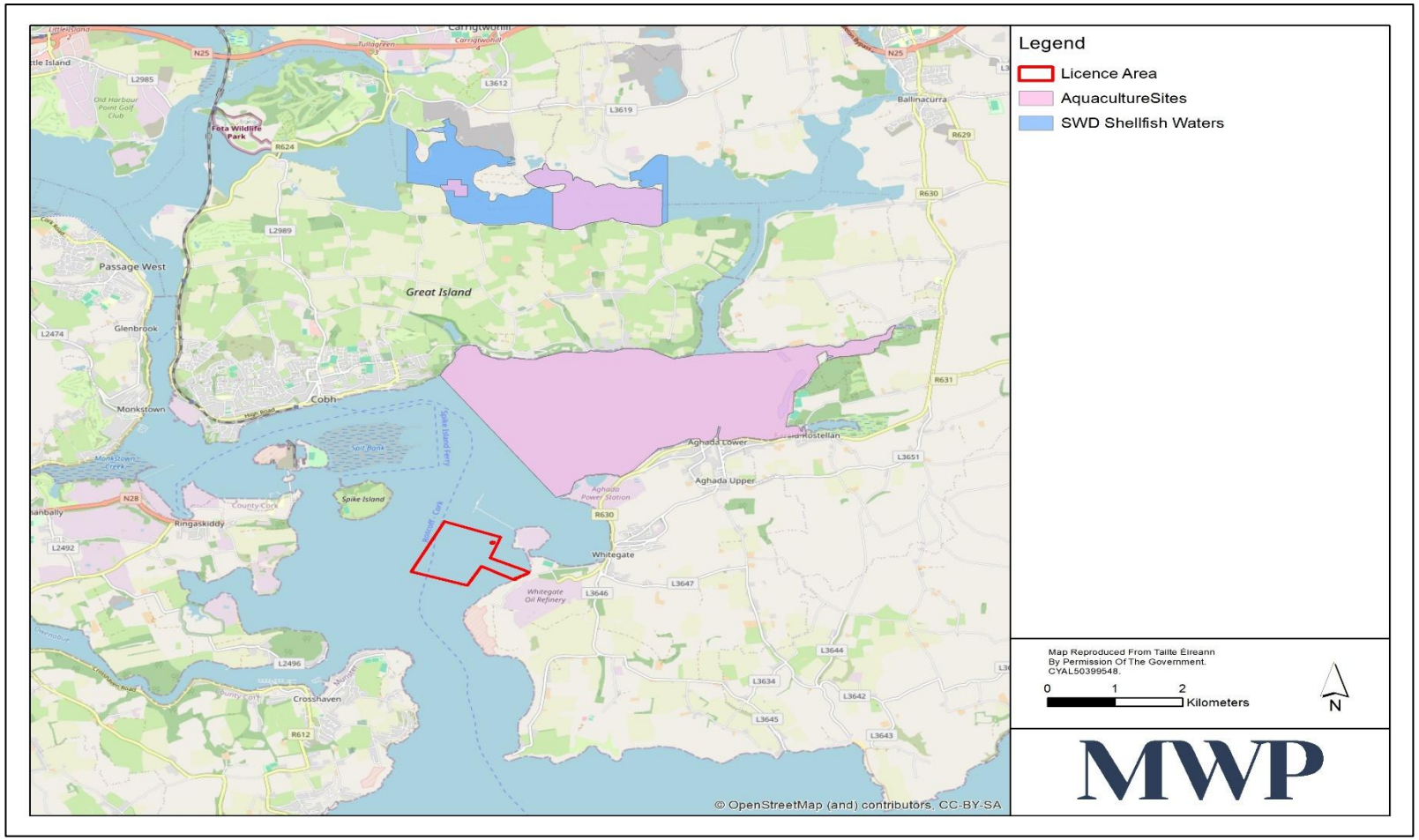

Figure 2-8: Aquaculture Sites and Shellfish Waters located in proximity to the FLAA (source: https://atlas.marine.ie/)

2.5 Marine Mammals

An Annex IV Species Risk Assessment for the proposed SI works has been undertaken by Dr Simon Berrow of the IWDG. The report outlines that Cork Harbour and its approaches, including the areas adjacent to the proposed site, are important for some marine mammals including Annex IV species such as the bottlenose dolphins and grey seals. Mitigation is recommended through provision of a MMO during geophysical and geotechnical activities to comply with NPWS (2014) guidelines. Mitigation to reduce impacts on Annex IV cetacean species is outlined for the proposed works and if implemented will result in no significant impacts on marine mammals.

2.6 Birds

2.6.1 Special Protection Areas (SPAs)

Cork Harbour is a large, sheltered bay system, with several river estuaries, principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. Cork Harbour SPA is designated for 23 predominantly wintering species of bird that use the mudflats and sandflats as well as other coastal habitats for feeding and nesting. The site is of important conservation interest for holding an assemblage of over 20,000 wintering waterbirds. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds. Cork Harbour has a nationally important breeding colony of Common Tern (3-year mean of 69 pairs for the period 1998-2000, with a maximum of 102 pairs in 1995). The birds have nested in Cork Harbour since about 1970 and, since 1983, on various artificial structures, notably derelict steel barges and the roof of the Martello Tower to the north of the site. The birds are monitored annually and the chicks are ringed . Common tern breeds on the coastal areas, and inland on islets in freshwater lakes.

2.6.2 Ramsar Site

The Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat, is an international treaty that was established for the conservation and sustainable use of wetlands. The Ramsar Convention was ratified by Ireland in 1984 and came into force for Ireland on 15 March 1985. Ireland presently has 45 sites designated as Wetlands of International Importance, with a surface area of 66,994 hectares.

Cork Harbour Ramsar site (site no. 837) supports various breeding water birds, internationally important numbers of wintering and spring staging water birds and provides important feeding areas for waders. The site comprises two sections one of which is located in the north-east corner of the harbour encompassing the area from Little Island to Midleton, with its southern boundary being formed by Great Island; the other is in the west of the harbour encompassing the intertidal flats of Lough Mahon. The site is a wetland of international importance for its wintering populations of black-tailed godwit, curlew and redshank and its spring migration numbers of whimbrel; while twelve species occur at nationally important levels. The Ramsar site overlaps with Cork Harbour SPA and IBA sites (see below) and, with the exception of whimbrel, the species identified in site documentation as occurring in the Ramsar site in important numbers are included as Special Conservation Interests (SCIs) species for which the SPA site is selected.

2.6.3 Important Bird Areas (IBAs)

The Important Bird Areas (IBA) Programme is a BirdLife International initiative aimed at identifying and protecting a network of critical sites for the conservation of the world's birds. There are 156 IBAs in Ireland including 140 in the Republic of Ireland and 16 in Northern Ireland, 122 of which support wintering water birds. These sites are important for breeding seabirds and for wintering wildfowl.

5,950 ha of the Cork Harbour waters are designated as an IBA (Site Code: IE088) for the conservation of important wetland, breeding and migratory bird populations. Cork Harbour regularly supports over 20,000 waterfowl which includes: various breeding water birds, internationally important numbers of wintering and spring staging water birds and provides important feeding areas for waders. It is one of the most important sites in Ireland for breeding tern and for wintering great crested grebe, red-breasted merganser, oystercatcher, and lapwing, as well as for staging whimbrel. Several other species also occur in numbers of national importance, including cormorant, shelduck, wigeon, teal and golden plover. The IBA overlaps with Cork Harbour SPA and Ramsar sites and, with the exception of whimbrel, the species occurring in the IBA site in important numbers are included as SCI species for which the SPA site is selected.

2.6.4 Wading Birds, Wildfowl & Gulls

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000, for which it is amongst the top five sites in the country) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. It is an important site for gulls in winter and autumn, especially Common Gull and Lesser Black-backed Gull.

Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary.

2.6.5 Review of the Irish Wetland Bird Survey (I-WeBS) & Waterbird Survey Programme

Most species which occur in Ireland migrate from the north and northwest (principally Canada, Greenland and Iceland) or from the northeast (northern continental Europe, including Scandinavia, Russia and Siberia), moving south to winter predominantly in west and northwest Europe and west Africa (Wetlands International, 2006, Wernham *et al.,* 2002). Estuaries and other wetlands of north-west Europe support vast numbers of these migratory wading birds and wildfowl each winter. These wetland habitats along with the mild climate, provide ample feeding throughout the winter period, particularly when many other parts of northwest Europe are frozen over. It is the high densities of benthic macroinvertebrates and easy access which are the main attraction of these wetland sites. Disturbance free roosting and resting areas are additional important ecological requirements. It is a combination of these factors which make Ireland particularly attractive for wintering waterbirds.

The Irish Wetland Bird Survey (I-WeBS) is the scheme that monitors wintering waterbirds in Ireland. The survey runs from September to March each winter. Wetlands of all types and sizes are monitored, including estuaries, coastlines, bays, rivers, turloughs, lakes, streams and flooded fields. I-WeBS is traditionally a high-tide survey and at large, complex estuarine sites with extensive intertidal areas that require some time to cover, counts are typically made within three hours either side of the high tide.

Non-breeding waterbirds are counted at Cork Harbour each winter as part of the Irish Wetland Bird Survey (I-WeBS). The dataset spans the period 1994/95 to 2020/2021 and a total of 21 count subsites, covering some 2,961 ha have been monitored regularly. The subject site is located close to the Cork Harbour I-WeBS subsite 0L491 Whitegate Bay, while the subsites 0L612 Great Island – Aghada, 0L613 Great Island – Aghada Inner and 0L099 Rostellan Lake and OL491 Whitegate Bay occur to the north and north east of the site. The subsites Spike Island 0L606, Lough Beg 0L453 and Owenboy Estuary 0L454 are located to the west (Figure 2-9).

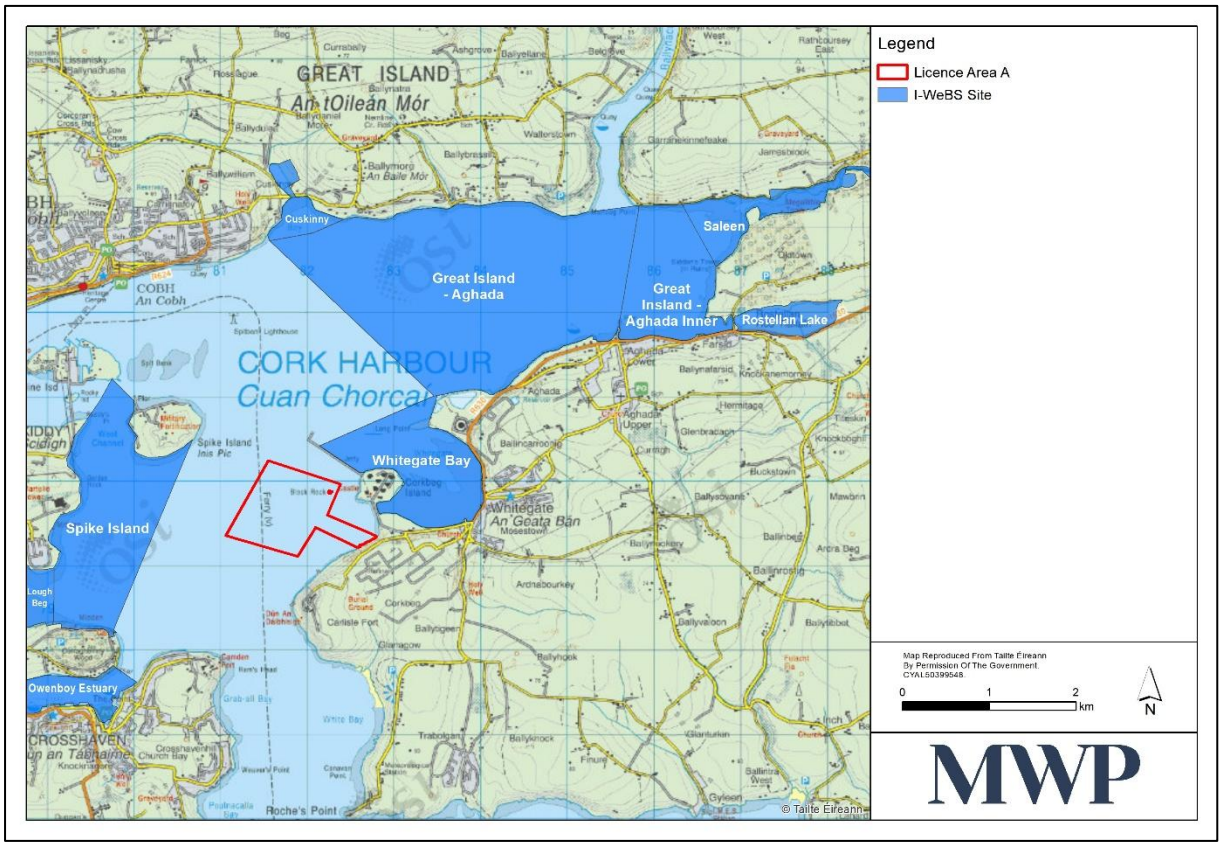

Figure 2-9: I-WeBS sites located near the subject site

2.6.6 Review of NPWS Winter Bird Survey 2010/2011

During 2010/2011, a waterbird survey programme was conducted by the NPWS within Cork Harbour. This waterbird survey programme was designed to investigate how waterbirds are distributed across coastal wetland sites during the low tide period. The surveys ran alongside and were complementary to the Irish Wetland Bird Survey (I-WeBS). This survey consisted of four low tide counts (October, November and December 2010 and February 2011) and one high tide count (January 2011), where waterbirds were counted within a series of 73 count subsites within the SPA.

The behaviour of waterbirds during counts was attributed to one of two categories (foraging or roosting/other) while the position of birds was recorded in relation to one of four broad habitat types; Intertidal (area between mean high water and mean low water), Subtidal (area that lies below mean low water), Supratidal and Terrestrial. In addition to the main survey programme described above, a high tide roost survey was undertaken on the 29th and 30th November 2010. The subsites which made up this survey are shown below (**Figure 2-10**); 0L518 Black Rock which encompasses the proposed works area, Whitegate, 0L491 Whitegate Bay, 0L582 Carrabinny Wood and 0L519 White Bay to Graball Bay are the nearest to the site.

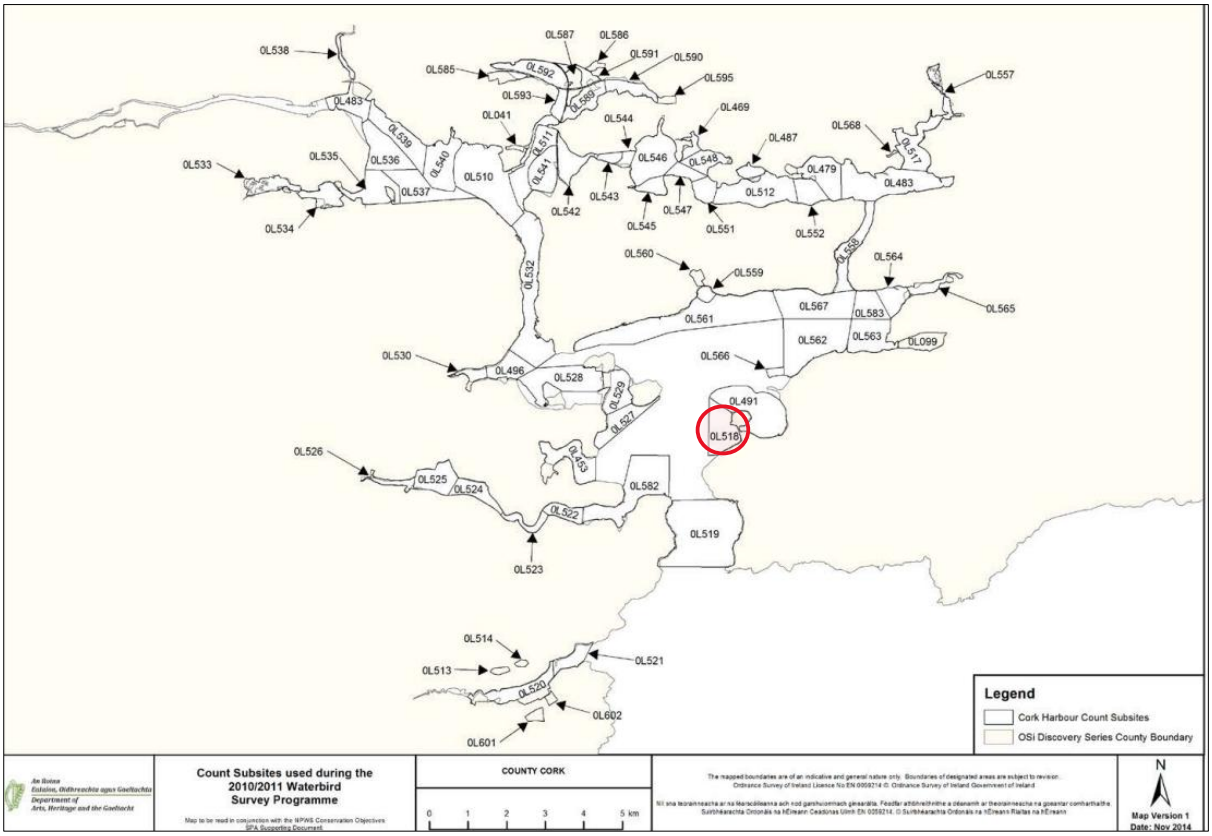

Figure 2-10: NPWS Waterbird Survey Programme Subsites (Source: NPWS.ie)

A total of 58 waterbird species were recorded during the 2010/11 survey programme at Cork Harbour, which includes all species listed as conservation interests for the Cork Harbour SPA. Of the species listed as special conservation interests for the Cork Harbour SPA, 27 were recorded in the survey area, namely; Curlew, Lapwing, Black-tailed Godwit, Redshank, Wigeon, Dunlin, Teal, Little Grebe, Little Egret, Cormorant, Grey Heron, Black-headed Gull, Common Gull, Great Crested Grebe, Oystercatcher, Turnstone, Ringed Plover, Shelduck, Mallard, Gadwall, Greenshank, Shoveler, Red-breasted Merganser, Common Gull, Mediterranean Gull, and Lesser black-backed Gull. Pintail was once common in the area but has seen a dramatic decline in numbers recorded over the last decade.

2.6.7 Examples of designated supporting habitat

Examples of foreshore marine habitat use by birds at protected sites in the area of the FLAA are provided here.

The nearest SPA to the FLAA is Cork Harbour SPA (0.3km north) which is also designated as a Ramsar site and is described within its relevant Natura 2000 data form as an internationally important wetland site, comprising a "large, sheltered bay system" including shallow marine waters, river estuaries with (generally mud) intertidal areas, salt marshes and stony shorelines. The adjacent land uses are agricultural fields and major industrial and urban centres. Bird species and assemblages cited as qualifying interests of the site (waterfowl, waders) use the full range of habitats within the site for foraging and roosting, in the non-breeding periods (migration and overwintering) with the exception of common tern *Sterna hirundo* which breed and forage within the site but are a species which migrates to the tropics and southern hemisphere for their non- breeding period. Common tern breeding colonies exist at multiple locations within Cork Harbour SPA and include colonies on artificial structures.

2.6.8 Potential impacts

The sources of potential direct impact to birds from survey activities are considered to be:

- Disturbance/displacement to birds from survey activities presence of vessels and associated equipment (visual disturbance), noise (above-water and underwater)); and
- Changes in suspension of sediments and other solid material (affecting water clarity).

Sources of potential indirect impact to birds via prey and/or supporting habitats, across survey activities, are considered to be:

- Disturbance/displacement effects on birds' prey populations e.g. fish and invertebrates, from vibration, noise or physical disturbance to the seabed and its substrata; and
- Changes in suspension of sediments and other solid material.

An additional range of sources of impact are:

- Introduction of light, invasive and non-indigenous species, nutrients, or organic matter;
- Deoxygenation;
- Contamination from litter, hydrocarbons, synthetic compounds, transition elements or organometals; and
- The potential for accidental discharge and spillage of oils, fuels and materials would be managed through compliance with MARPOL.

During the proposed surveys, there is the potential for pollution from spills or leaks of fuel and oil. The risk of this arising can be minimised by following standard good practice, and as required by law, with regard to pollution prevention guidance, which is detailed further in Section 2.11. It is considered there will be no impacts in relation to ornithological receptors due to pollution events.

Overall due to the scale and nature of the proposed surveys significant impacts to birds from any of the sources listed above are not expected. The SISAA report considered the impacts to European sites for birds concluding there would be no adverse effect on the integrity of any site designated for birds. European sites considered in the screening include:

- Cork Harbour SPA; and
- Great Island Channel SAC

2.7 Commercial Fisheries

The European Marine Observation and Data Network (EMODnet) shipping density data and European Maritime Safety Agency (EMSA) route density data show the density of fishing or fishing routes through the FLAA shown on Figure 2-11. There are commercial fishing vessels that pass through the FLAA. Ireland's Marine Atlas shows there is an amount of trawling, gill nets and seine nets that occur within the boundary of the FLAA. Notice to Mariners covering each survey period and appropriate vessel lighting for navigational safety will be issued. In advance of any works commencing the SI contractor and other contractors will be provided with a schedule of shipping movements by PoCC.

Due to the proposed surveys being short term and temporary, and due to the presence of alternative fishing grounds surrounding the FLAA there are no significant impacts expected to commercial fisheries.

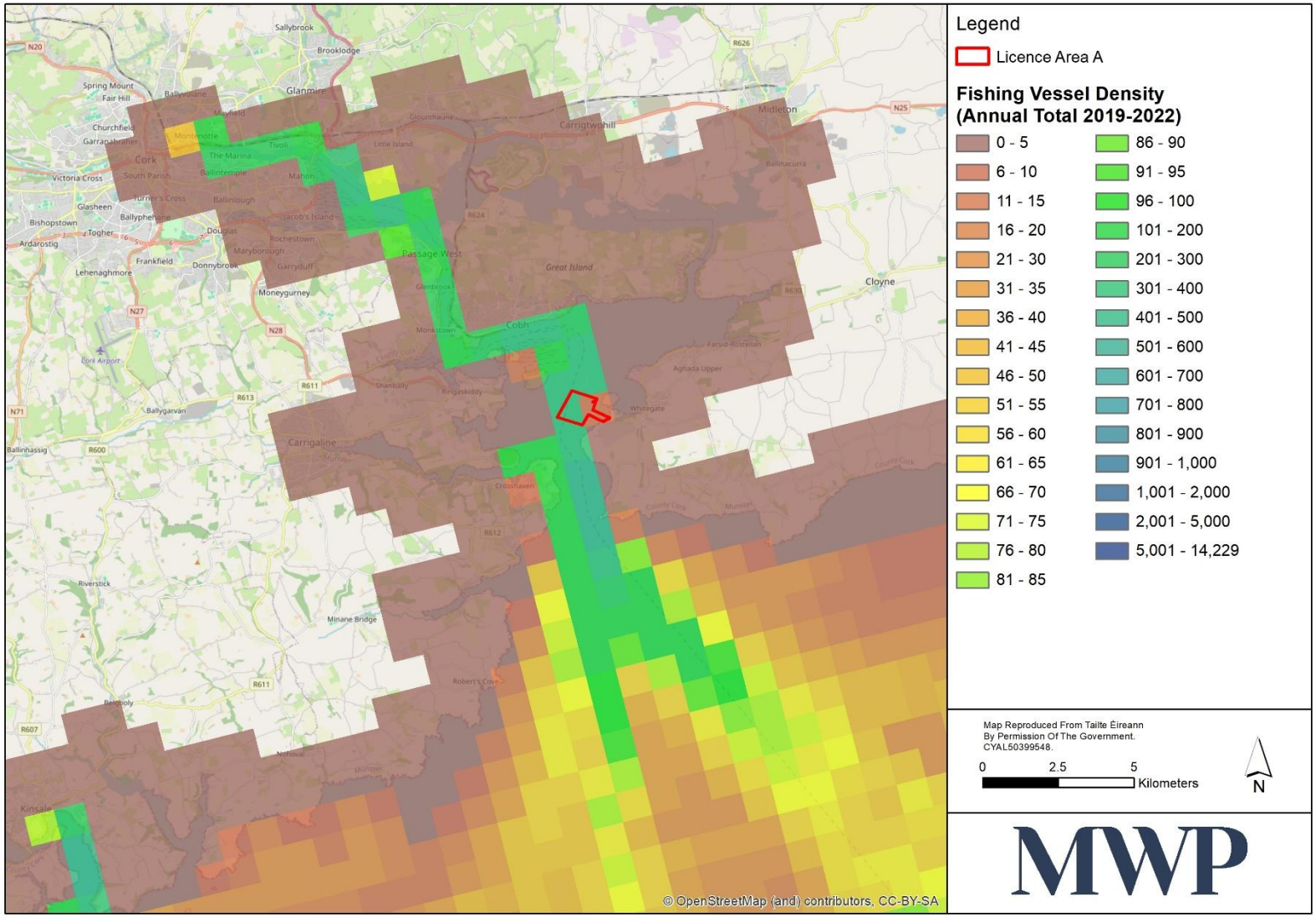

Figure 2-11: Commercial Fishing Routes Density 2019-2022 in the vicinity of the FLAA (Source: https://emodnet.ec.europa.eu/geoviewer/)

2.8 Shipping and Navigation

EMODnet's shipping density and EMSA's route density shows an area of high-density shipping passing through the FLAA, shown in **Figure 2-12**. There are a number of vessels including cargo vessels and tankers entering Cork harbour, with a defined route passing across the FLAA from Cork across the Celtic channel into UK waters. Therefore, there is a risk of collision due to the presence of the survey vessels.

Surveys will be undertaken in compliance with the International Regulations for Preventing Collisions at Sea. Other measures which will be implemented to prevent risks to existing shipping and navigation include submission of Notice to Mariners covering each survey period and appropriate vessel lighting for navigational safety. In advance of any works commencing the SI contractor and other contractors will be provided with a schedule of shipping movements by PoCC.

The surveys will be short term and temporary, and there are no likely significant impacts expected to shipping.

A Marine Notice shall be published for the information of all local maritime users detailing the proposed works and any associated hazards to navigation arising for the duration of the licence period.

The marking and lighting of any additional buoyage used for the project shall be carried out in consultation with the Marine Survey Office and Commissioners of Irish Lights. Lighting and marking shall be complaint with International Association of Aids to Navigation (IALA) requirements. Information regarding the position of any marking which create hazard to navigation shall be promulgated to the mariner via publication of a marine notice and all available means appropriate.

All vessels engaged in the above must confirm to the Irish Certification standards and the vessels be manned by suitably qualified personnel. Where members of the public are carried who do not form an integral part of the crew, a passenger boat license must be applied for if not already in existence, additionally where equipment is carried an Irish Load line survey may be required. The applicant should contact the Marine Survey Office Dublin for clarification in relation to the above matters.

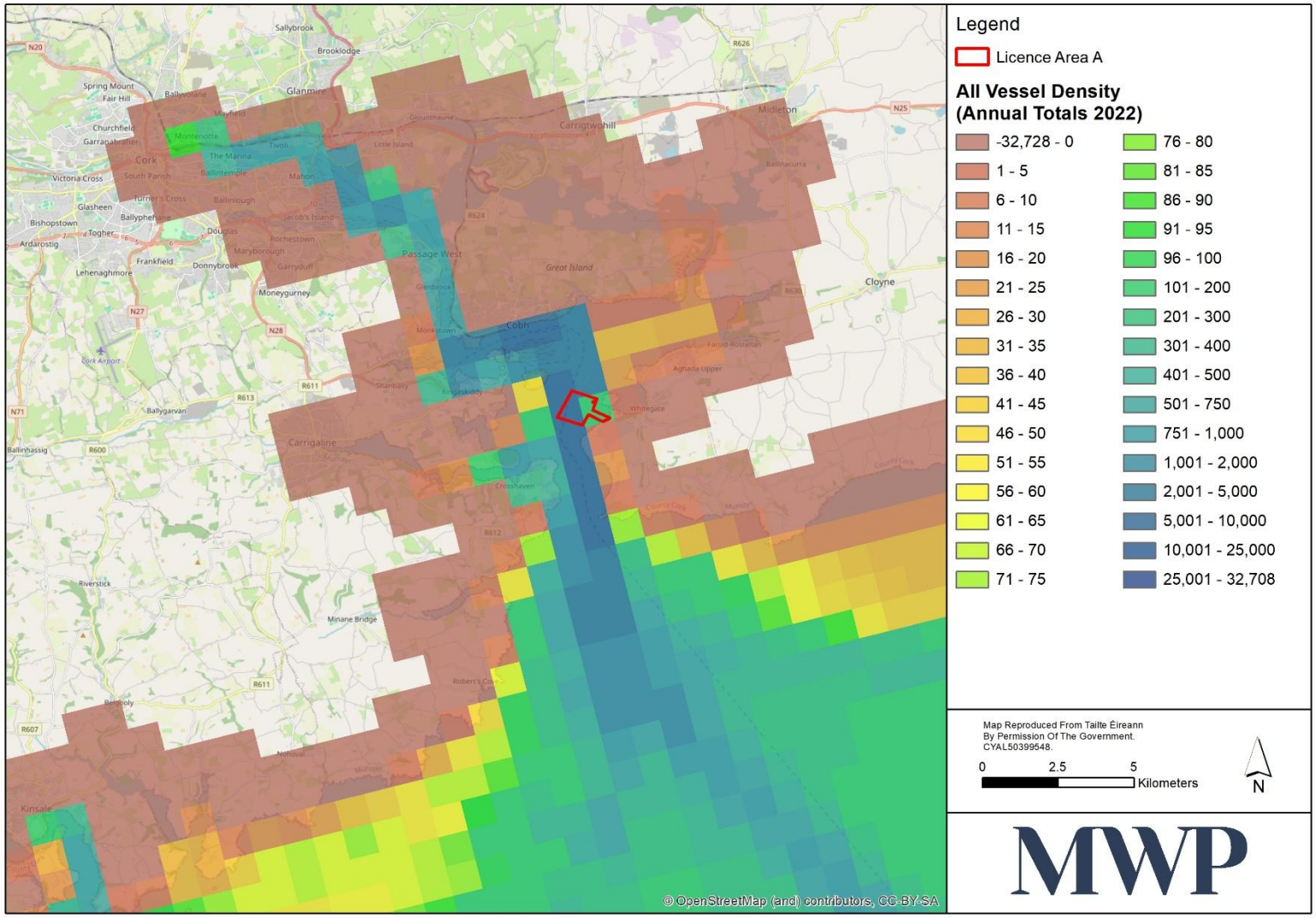

Figure 2-12: Shipping Vessels Routes Density 2022 in the vicinty of the FLAA (source: https://emodnet.ec.europa.eu/geoviewer/)

2.9 Other Marine Users

Ireland's Marine Atlas does not highlight any ocean infrastructure such as data buoys or any other pipelines or subsea infrastructure in the FLAA.

However, due to the potential of existing offshore infrastructure overlapping and in close proximity with the FLAA there is potential for the infrastructure to be impacted by the proposed surveys. However, the following measures will be implemented in order to prevent impacts to these existing offshore assets:

- Geophysical surveys will be undertaken first to identify the locations of the assets and determine if there are any others not currently identified from pre-existing data;
- Geotechnical and benthic ecology surveys will be undertaken after the geophysical surveys, and the design of the surveys will be based on the results of the geophysical surveys;
- A safety zone of 250m buffer around any identified assets will be imposed and no seabed samples will be collected from within the safety zone during the geotechnical and benthic surveys; and
- Third party asset owners will be consulted prior to the intrusive surveys works being undertaken, where required.

If the measures listed above are implemented, it is considered there will be no likely significant impacts to existing offshore infrastructure due to the proposed surveys.

2.10 Marine Archaeology

The National Monuments Service's (NMS) Wreck Inventory of Ireland Database (WIID) holds records of over 18,000 known and potential wreck sites in Irish waters. These records indicate that there are no wrecks within the FLAA. The wrecks from the WIID in the vicinity of the FLAA are shown on Figure 2-13. There are no other records of wrecks recorded in the INFOMAR Shipwreck data within the the FLAA.

Wrecks over 100 years old and archaeological objects underwater, irrespective of their age or location, are protected under Section 3 of the National Monuments (Amendment) Act 1987. It should also be noted that some wrecks that are less than 100 years old, or the potential location of wrecks or archaeological objects, may also be protected under Section 3 (subject to the placement of an underwater heritage order) if considered to be of sufficient historical, archaeological or artistic importance to merit such protection. The RMS Lusitania is one such example which was less than 100 years old when it was protected. Should further information on the survival or identity of these vessels become available, there is potential that these may also be afforded protection under the Act.

Further marine archaeological receptors comprise potential wrecks or aircraft crash sites, or associated debris, which may be present within the FLAA but not yet discovered, and palaeo landscape features and deposits of palaeo environmental interest associated with the potential for submerged prehistoric sites.

There is potential for the proposed survey to impact these protected marine archaeology receptors. However, a number of measures will be in place in order to prevent impacts to these marine archaeology receptors, detailed below.

The proposed geophysical surveys will be carried out prior to the geotechnical surveys. The geophysical survey is non-invasive so will have no impact on archaeological receptors. The data from the geophysical surveys will be analysed in order to determine the scope of the intrusive works (geotechnical and benthic ecology surveys), to ensure the sample locations avoid wrecks and aircraft crash sites if identified, in addition to identified seabed features of potential archaeological interest. The scope of the geotechnical and benthic surveys will be planned

to take account of geoarchaeological objectives as advised by a licenced marine geoarchaeology specialist where items of potential archaeological interest are identified by geophysical surveys.

During the geophysical surveys, if any significant archaeological finds are made, there may need to be further measures implemented, however they would be agreed with the DoHLGH if required, prior to the geotechnical and benthic ecology surveys being undertaken.

If the measures listed above are implemented, it is considered there will be no impacts to marine archaeology due to the proposed surveys.

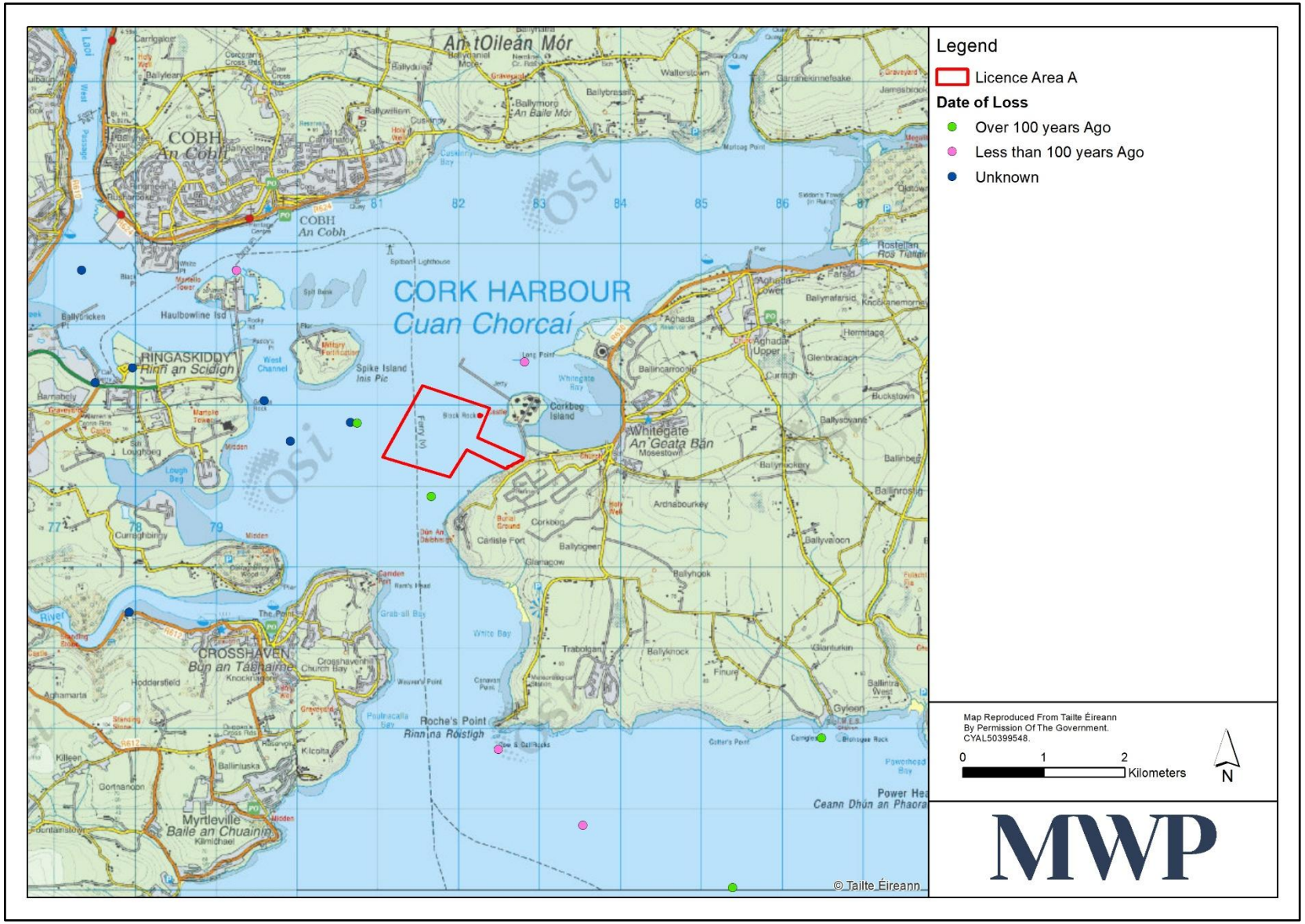

Figure 2-13: Recorded Ship Wrecks in the vicinity of the FLAA (source: https://atlas.marine.ie/)

2.11 Water

The benthic ecology and geotechnical surveys will result in disturbance to the seabed, which will cause an increase in suspended sediment concentrations resulting in an increase in turbidity in the water column. The spatial extent of seabed disturbance will be localised, short term and temporary with turbidity expected to return to background levels rapidly, therefore no significant impacts to water quality are expected.

During the proposed surveys there is potential for pollution from spills or leaks of fuel and oil. However, the risk of accidental spills / leaks will be managed through implementation of a Project Environmental Management Plan (PEMP), developed prior to any survey being undertaken. The PEMP will include, but is not limited to:

- Oils and lubricants used in the survey equipment would be biodegradable where possible, and all chemicals would be certified to the relevant standard;
- Good practice procedures would be put in place when transferring oil or fuel between service vessels;
- Vessels must be free of invasive alien species on their hulls and in their ballast water;
- Vessels must comply with the International Maritime Organization (IMO) ballast water management guidelines;
- Appropriate vessel maintenance following guidance from MARPOL;
- Appropriate spill plan procedures would also be implemented in order to appropriately manage any unexpected discharge into the marine environment;
- Inclusion of control measures such as the requirement to carry spill kits, and bunding to contain any spill, and the requirement for vessel personnel to undergo training to ensure requirements of the PEMP are understood and communicated;
- All work practices and vessels will adhere to the requirements of MARPOL 73/78; specifically Annex 1 Regulations for the prevention of pollution by oil concerning machine waters, bilge waters and deck drainage and Annex IV Regulations for the prevention of pollution by sewage from ships concerning black and grey waters; and
- All vessels will be certified by the Marine Survey Office.

Due to the short-term temporary nature of the surveys and following standard good practice and as required by law, there are no significant impacts expected to water quality due to the proposed surveys.

2.12 Air

Under the Clean Air for Europe (CAFE) Directive, EU member states must designate "Zones" for the purpose of managing air quality. For Ireland, four zones were defined in the Air Quality Standards Regulations (2011). The zones were amended on 1 January 2013 to take account of population counts from the 2011 CSO Census and to align with the coal restricted areas in the 2012 Regulations (S.I. No. 326 of 2012).

The main areas defined in each zone are:

- Zone A: Dublin;
- Zone B: Cork;
- Zone C: Other cities and large towns comprising Limerick, Galway, Waterford, Drogheda, Dundalk, Bray, Navan, Ennis, Tralee, Kilkenny, Carlow, Naas, Sligo, Newbridge, Mullingar, Wexford, Letterkenny, Athlone, Celbridge, Clonmel, Balbriggan, Greystones, Leixlip and Portlaoise; and

- Zone D: Rural Ireland, i.e. the remainder of the State excluding Zones A, B and C.

The site is located in the air quality management area Zone D, the zone with the highest air quality. Air quality management area Zone B is located across the harbour to the west, and includes the urban areas of Passage West, Upper Pembroke and, further afield, Cork city.

Due to the nature of the proposed surveys, there will be no releases to air other than from vessel exhausts, which will not exceed Air Quality standards. Therefore, there will be no impact to air quality due to the proposed surveys.

2.13 Climate

Given the scale and nature of the works, the fact that there are no impacts to air quality or water quality, and following standard good practice, and as required by law, to prevent accidental oil spillages, the proposed surveys will not contribute to climate change in a significant way.

2.14 Landscape and Seascape

A large proportion of the FLAA within and around Cork Harbour is characterised by a number of shipping routes and areas with high vessel density, therefore there is already a visual disturbance caused by vessels. Due to the short-term temporary nature of the surveys, the survey vessels will not cause any additional significant visual disturbance. There are no sites designated for landscape and visual receptors such as United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites along the boundary of the coastline adjacent to the FLAA.

The proposed works site lies adjacent to a High Value Landscape as designated un the Cork County Development Plan (CDP) 2022.2028. The R630 public road which is the major connection route is a Scenic Route (S51) that runs along the coastline from Ballynacorra via East Ferry to Whitegate and Roche's Point.

The Scenic Route (S50) also runs between Inch and Aghada and runs through the study area.

However, due to the short-term temporary nature of the proposed surveys, and when view in context of the existing vessels already present in the area, no impacts to landscape and visual receptors are expected.

2.15 Major Accidents and Disasters

The proposed surveys are not expected to add to or cause any natural disasters such as flooding or storms, collision events or major spills. If the navigational good practice measures listed in Section 2.8 are adhered to, including compliance with the International Regulations for Preventing Collisions at Sea, Notice to Mariners covering each survey period and appropriate vessel lighting for navigational safety, then the risk of accidents would be reduced to as low as reasonably practicable. Additionally, if the water quality good practice measures listed in Section 2.11 are implemented, no spills are expected. Therefore, no likely significant impacts are expected in relation to major accidents and disasters.

The proposed surveys are not expected to be carried out in adverse weather conditions, however if a survey vessel is unexpectedly caught in such weather, vessels will take appropriate actions, in line for example with the 'Revised guidance to the master for avoiding dangerous situations in adverse weather and sea conditions' (IMO Circular MSC.1/Circ. 1228, 11 January 2007).

There are three Seveso/COMAH sites nearby (Whitegate/Irving Oil Refinery, Aghada ESB Power Station and Calor Teoranta which is located adjacent to the Bord Gáis power station). However, the proposed works will not cause any interference with the workings of these facilities thus no significant effects on these operations are predicted.

2.16 Population and Human Health

The villages of Whitegate and Aghada are the most notable built-up areas within proximity to the proposed works site. The village of Whitegate is home to several housing estates, a church, Whitegate National School, Whitegate Garda Station and several commercial enterprises. Amenity sites in the area comprise the Corkbeg AFC and Corkbeg Pitch and Putt Club and Whitegate Rowing Club . The population of Whitegate village, according to CSO data collected in 2016 is 1,154 people.

Aghada is home to a number of housing estates, the Aghada National School, a church and several commercial enterprises. Amenity sites in the area include a Sailing Club and a pier used for fishing and other water related amenities. According to data provided by the Central Statistics Office (CSO) taken in 2016, the population of Aghada is 1,030 people.

The proposed site investigation works are not predicted to cause any significant negative impacts on the local population given the location of the works offshore and the temporary nature of the works. Potential impacts on the marine/maritime uses have been discussed in the preceding section and with appropriate notification and consultation no likely significant effects on the local population are predicted.

2.17 Cumulative

Existing activities overlapping with the FLAA have already been considered in relation to commercial fisheries (Section 2.7), shipping and navigation (Section 2.8), and Other Marine Users (Section 2.9). No impacts were determined in relation to existing activities overlapping with the FLAA. As described in Section 4.6 of the SISAA, there is no potential for cumulative significant effects to occur as a result of in-combination effects.

The Cork County Council online planning records and foreshore application records were consulted in June 2023. Irving Oil Whitegate Refinery Limited who operate Whitegate Refinery, Corkbeg, Whitegate, Midleton, Co. Cork have been granted planning permission for two phases of development works at the nearby existing oil refinery facility:

- Ref 225173, Irving Oil Whitegate Refinery Limited, Whitegate Refinery, Corkbeg, Whitegate, Midleton, Co. Cork. The construction of a containment basin, pipework with associated pipe platforms and all ancillary development works at the existing oil refinery facility. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application. The proposed development is for modifications to an establishment to which the Major Accident Directive applies. The proposed development is for the purposes of an activity requiring an integrated pollution control licence [Industrial Emissions Directive (IED) Licence].
- Ref 204572, Irving Oil Whitegate Refinery Limited, Whitegate Refinery, Corkbeg, Whitegate, Midleton, Co. Cork. The construction of an extension to an existing containment basin and all ancillary development works at their existing oil refinery facility. Ancillary site works to include a temporary stockpile, gabion wall along the northern boundary of the proposed catchment basin slope and pipe rack for an existing pipeline. Access to the proposed development will be via the existing entrances to the refinery facility from the R630. A Natura Impact Statement (NIS) has been prepared and will be submitted to the Planning Authority with the application. The proposed development is for modifications to an establishment to which the Major Accident Directive applies. The proposed development is for the purposes of an activity requiring an Integrated pollution control licence [Industrial emissions Directive (IED) Licence].
- Ref 206463, Uisce Éireann – Irish Water, Townlands of Knockanemorney TD, Ballynafarsid TD, , Aghada TD, Curragh, Mosestown TD, Ballincarroonig , Corkbeg, TD, Ardnabourkey TD, Glanagow TD, , Trabolgan,

Ballytigeen, Co. Cork. The development which consists of the construction of a sewerage scheme, landscaping and associated site works, for the villages of Whitegate and Aghada. The scheme consists of the following components: A) A proposed wastewater treatment plant (WWTP) at Ballytigeen TD, with associated and ancillary development works including an access road, tanks, storage facilities, inlet works, all associated site development works, boundary fencing around the perimeter of the WWTP, a gravity sewer and long sea outfall to convey treated discharge effluent from the WWTP to White Bay through Glanagow TD and Trabolgan TD. B) A proposed underground wastewater pump station and associated infrastructure in Rostellan at the Thomas Kent Memorial Park at Knockanemorney TD, including an underground pump sump, underground stormwater storage tank, valve and flowmeter chambers, manholes, pipework, access road and gate, control kiosks and vent stack. C) A proposed rising main at Knockanemorney TD, Ballynafarsid TD and Aghada TD, to convey flows from the proposed Rostellan pump station to a proposed pump station in Lower Aghada. D) A proposed underground wastewater pump station and associated infrastructure at Lower Aghada located west of the pier at Aghada TD, including an underground pump sump, underground stormwater storage tank, valve and flowmeter chambers, manholes, pipework, access road, gate, control kiosks, a surge vessel, a vent stack and the decommissioning of an existing package wastewater treatment plant. E) A proposed rising main to convey flows from the proposed Lower Aghada pump station to an existing sewer in the Upper Aghada sewerage network at Aghada TD. F) A proposed upgrade to the existing sewerage system by the replacement of an existing 150mm diameter sewer with a proposed 225mm diameter sewer at Aghada TD and Curragh TD. G) A proposed underground wastewater pump station and associated infrastructure at the Square in Whitegate Village including an underground pump sump, underground stormwater storage tank, valve and flowmeter chambers, manholes, pipework, control kiosks and vent stack, and decommissioning of existing pump station, in Mosestown TD and Ballincarroonig TD. H) A proposed rising main to convey flows from the proposed Whitegate pump station to the proposed WWTP at Mosestown TD, Corkbeg TD, Ardnabourkey TD and Ballytigeen TD. I) A proposed 225mm diameter gravity sewer in Ardnabourkey TD and decommissioning of an existing septic tank.

In consideration of the conclusion of the EIA Screenings completed for the planning permissions noted above and the scale and temporary nature of the proposed works, it can be considered that there is no potential for in-combination effects, to occur between the projects and the proposed marine SI works at Dognose, Co. Cork.

3. Environmental Assessment Conclusions

This NSER has been undertaken considering the characteristics and location of the proposed surveys. An environmental appraisal has been undertaken in order to determine any potential impacts that could arise due to the proposed surveys.

The NSER is supported by and takes into account the outcome of the SISAA and Annex IV Species Risk Assessment that are submitted alongside this NSER in support of the FLA for the proposed surveys.

Due to the nature and scale of the proposed surveys, the NSER has concluded there will be no significant environmental impacts due to the proposed surveys.

References

Berrow, S.D. & Heardman, C., 1994. The basking shark *Cetorhinus maximus* (Gunnerus) in Irish waters - patterns of distribution and abundance. Proceedings of the Royal Irish Academy B, 94 (2), 101-107.

Cetacean monitoring during the Celtic Sea Herring Acoustic Survey (CSHAS) (2014). A report to the National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht by Ciarán Cronin and Colin Barton, November 2014.

Crowe, O. (2005) Ireland's Wetlands and their Waterbirds: Status and Distribution. Birdwatch Ireland, Rockingham, Co. Wicklow.

Ellis, J., Milligan, S., Readdy, L., South, A., Taylor, N. and Brown, M. (2010) Mapping spawning and nursery areas of species to be considered in Marine Protected Areas (Marine Conservation Zones) – Report No. 1: Final Report on development of derived data layers for 40 mobile species considered to be of conservation importance. Final Version August 2010. Defra project code MB5301.

International Maritime Organisation (IMO). Circular MSC.1/Circ. 1228 dated 11 January 2007, Revised guidance to the master for avoiding dangerous situations in adverse weather and sea conditions

IWDG Consulting (2023). ANNEX IV SPECIES RISK ASSESSMENT OF DOGNOSE BANK, WHITEGATE, CO CORK.

Mackey, M., Didac, P.G. and O'Cadhla, O. (2004)., SA678 Data Report for Offshore Cetacean Populations. Coastal & Marine Resources Centre, Environmental Research Institute, University College Cork.

Marine Institute (2009). Species Spawning and Nursery Areas. Fisheries Science Services, Marine Institute. Available at: https://data.gov.ie/dataset/species-spawning-and-nursery-areas

Natural England (2022). Advice on Operations. Natural England Conservation Advice for Marine Protected Areas -Flamborough and Filey Coast SPA. Available at: https://designatedsites.naturalengland.org.uk/Marine/FAPMatrix.aspx?SiteCode=UK9006101&SiteName=flamborough&SiteNameDisplay=Flamborough+and+Filey+Coast+SPA&countyCode=&responsiblePerson=&SeaArea=IFCAArea=&NumMarineSeasonality=4 Last updated 18 March 2022

NPWS: Site Conservation Objectives, Site Synopsis and Standard Natura 2000 data forms for all SAC's within a 15km radius of the proposed project site and all SPA's within a 15km radius of the proposed project site. Accessed May 2023. Available at: https://www.npws.ie/protected-sites

Pollock, C., Reid, J. B., Webb, A. and Tasker, M. L. (2000). The distribution of seabirds and cetaceans in the waters around Ireland. JNCC Report, No. 267

MWP (2023) Schedule of Works - Foreshore Licence Application for Marine Site Investigation Surveys at Dognose, Corkbeg, Whitegate, Co. Cork

MWP (2023) Supporting Information for Screening for Appropriate Assessment - Foreshore Licence Application for Marine Site Investigation Surveys at Dognose, Corkbeg, Whitegate, Co. Cork

Speedie, C. D. 2003. The value of public sightings recording schemes in relation to the Basking Shark in the United Kingdom. Cybium. 27(4). pp 255-259.

Wilding, C.M., Wilson, C.M. & Tyler-Walters, H. 2020. *Cetorhinus maximus* Basking shark. In Tyler-WaltersH. Marine Life Information Network: Biology and Sensitivity Key Information Reviews, [on-line]. Plymouth: Marine Biological Association of the United Kingdom. [cited 06-10-2022]. Available from: https://www.marlin.ac.uk/species/detail/1438