

## **Appendix E – Appropriate Assessment Report**

- **Aquafact – Appropriate Assessment Report (July 2014)**



# AQUAFAC

## **Appropriate Assessment of Rosslare Europort Maintenance Dredging and Beach Nourishment Campaign**

Produced by

**AQUAFAC International Services Ltd**

On behalf of

**Iarnród Éireann**

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## **1. Executive Summary**

AQUAFAC International Services were commissioned by Iarnród Éireann to carry out an Appropriate Assessment (AA) of its plans to dredge Rosslare Europort and dispose of the material in a beach nourishment site.

An initial 'Stage 1 Screening for Appropriate Assessment – Rosslare Europort Maintenance Dredging' report was prepared by Iarnród Éireann in April 2014 at a time when all of the proposal details and modelling results were unavailable. Due to this lack of information significant impacts could not be ruled out and the Iarnród Éireann screening report concluded that Stage 2 Appropriate Assessment (preparation of a Natura Impact Statement NIS) was required. However, a repeat of the screening stage for the current report incorporating all of the proposal details and modelling results, concluded that there is no potential for significant effects and Stage 2 Appropriate Assessment is not required.

## **2. Introduction**

### **2.1. Background**

Iarnród Éireann is seeking permission from the Department of Environment, Community & Local Government (Marine Planning & Foreshore Unit) to carry out a Maintenance Dredging and Beach Nourishment Campaign at Rosslare Europort, Co. Wexford. This campaign involves dredging of accumulated sand in the Approach Channel and Harbour to maintain navigation to Rosslare Europort. The dredged sands will subsequently be used for beach nourishment at Rosslare Strand. In 2011, a similar Maintenance Dredging and Beach Nourishment Campaign was carried out, under licence, in Rosslare Europort.

### **2.2. Requirement for an Article 6 Assessment**

The Birds Directive (2009/147/EC) and the Habitats Directive (92/42/EEC) put an obligation on EU Member States to establish the Natura 2000 network of sites of highest biodiversity importance for rare and threatened habitats and species across the EU. In Ireland, the Natura 2000 network of European sites comprises Special Areas of Conservation (SACs, including candidate SACs) and Special Protection Areas (SPAs, including proposed SPAs). SACs are selected 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 selected 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 selected correspond to the qualifying interests of the sites and from these the conservation objectives of the site are derived.

The Birds and Habitats Directives set out various procedures and obligations in relation to nature conservation management in Member States in general, and of the Natura 2000 sites and their habitats and species in particular. A key protection mechanism is the requirement to consider the possible nature conservation implications of any plan or project on the Natura 2000 site network before any decision is made to allow that plan or project to proceed. Not only is every new plan or project captured by this requirement but each plan or project, when being considered for approval at any stage, must take into consideration the possible effects it may have in combination with other plans and projects when going through the process known as Appropriate Assessment (AA).

The obligation to undertake Appropriate Assessment (AA) derives from Article 6(3) and 6(4) of the Habitats Directive, and both involve a number of steps and tests that need to be applied in sequential order. Article 6(3) is concerned with the strict protection of sites, while Article 6(4) is the procedure for allowing derogation from this strict protection in certain restricted circumstances. Each step in the assessment process precedes and provides a basis for other steps. The results at each step must be documented and recorded carefully so there is full traceability and transparency of the decisions made.

While neither the proposed dredge nor beach nourishment sites are located within a Natura 2000 site, they are located within 15km of the Slaney River Valley cSAC (site code: IE000781), Wexford Harbour and slob SPA (site code: IE0004076), Long Bank cSAC (site code: IE002161), Blackwater Bank cSAC (site code: IE002953), Carnsore Point cSAC (site code: IE002269), Raven Point Nature Reserve cSAC (site code: IE000710), The Raven SPA (site code: IE004019), Saltee Island cSAC (site code: IE000707), Lady's Island SPA (site code: IE 004009) and Tacumshin SPA (site code: IE004092) amongst others. For this reason, it is regarded as necessary that the proposal should be subject to the AA process.

### **2.3. The Aim of this Report**

The purpose of this report is to inform the AA process as required under the Habitats Directive (92/43/EEC) in instances where a plan or project may give rise to significant impacts on a Natura 2000 site. This NIS report is set out in two parts. The first is a Screening Assessment which aims to inform the Appropriate Assessment process in determining whether the proposed works, both alone and in combination with other plans or projects, are likely to have a significant impact on the Natura 2000 sites in the study area in the context of their

conservation objectives and specifically on the habitats and species for which the sites have been designated. The Screening Assessment provides a description of the proposed activity, a description of the receiving environment, it identifies the Natura 2000 sites within and close to the potential impact zone and it considers the potential for adverse effects on the conservation objectives and qualifying interests within the affected Natura 2000 site(s). If the effects are deemed to be significant, potentially significant or uncertain or where the screening process becomes overly complicated, then the preparation of an NIS to inform the AA process (Stage 2) is required under the requirements of Article 6(3) of the Habitats Directive.

This report has been prepared in accordance with the current guidance:

- Appropriate Assessment of Plans and Projects in Ireland - Guidance for Planning Authorities (DEHLG 2009, Revised February 2010);
- Marine Natura Impact Statements in Irish Special Areas of Conservation – A Working Document. April 2012 (DAHG, 2012)
- EU Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC (EC, 2007);
- 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, 2002); and
- Managing Natura 2000 Sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (EC, 2000).

The report is laid out as follows:

Section 3 outlines the Appropriate Assessment procedure. Section 4 covers the Stage 1 Appropriate Assessment Screening phase which provides a description of the proposed dredging and beach nourishment activity, a description of the receiving environment, identification of the relevant Natura 2000 sites and their Qualifying Interests (QIs)/Special Conservation Interests (SCIs) and a Screening Assessment and Screening Statement. Section 5 is a summary.

#### **2.4. Consultation**

During the preparation of this document, consultation was carried out with the National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht (DAHG) in identify the scoping opinion of the NPWS in relation to the proposed plan and to the ecological constraints and sensitivities of the habitats and species in the area. Appendix 1 shows the consultation letter and response.



### 3. Appropriate Assessment Process

#### 3.1. Legislative Context

The requirements for AA derive directly from Article 6(3) of the EU Habitats Directive (Directive 92/43/EEC) (DEHLG, 2009). AA is an impact assessment process that fits within the decision-making framework and tests of Articles 6(3) and 6(4). The AA process encompasses all of the processes covered by Article 6(3) of the Habitats Directive i.e. the screening process, the NIS, the AA by the competent authority and the record of decisions made by the competent authority at each stage of the process, up to the point at which Article 6(4) may come into play following a determination that a plan or project may adversely affect the integrity of a Natura 2000 site.

Article 6(3) states:

*'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.'*

Article 6 (4) states that:

*'If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted'.*

*'Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest'.*

In addition, the European Court of Justice (Waddenzee Ruling – Case C-127/02) has made a ruling in relation to AA:

*‘Any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the sites conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans of projects and that the plan or project may only be authorised where no reasonable scientific doubt remains as to the absence of such effects’*

It is the responsibility of the competent authorities, in this instance the Department of the Environment, Community and Local Government and the Environmental Protection Agency, to make a decision as to whether or not the proposed dredging and beach nourishment campaign (both alone and in combination with other plans and projects) should be permitted, taking into consideration any potential impact upon the Natura 2000 sites in question.

### 3.2. Stages of AA

The Commission’s methodological guidance (EC, 2002) promotes a four-stage process to complete the AA, and outlines the issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required.

The four stages are summarised diagrammatically in Figure 3.1 below.

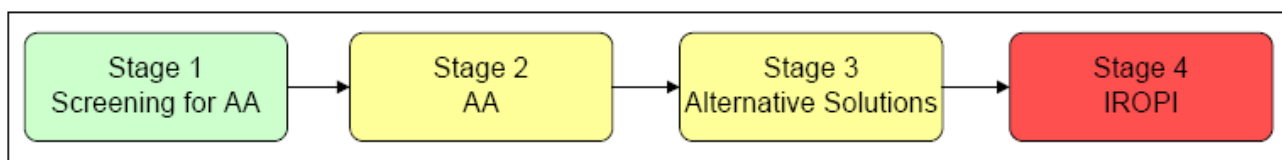


Figure 3.1: Stages in the AA process (Source: DEHLG, 2009).

#### 3.2.1. Stage 1. Screening for Appropriate Assessment

Screening is the process that addresses and records the reasoning and conclusions in relation to the first two tests of Article 6(3):

- i. whether a plan or project is directly connected to or necessary for the management of the site, and
- ii. whether a plan or project, alone or in combination with other plans and projects, is likely to have significant effects on a Natura 2000 site in view of its conservation objectives.

If the effects are deemed to be significant, potentially significant, or uncertain, or if the screening process becomes overly complicated, then the process must proceed to Stage 2 Appropriate Assessment (preparation

of an NIS). Screening should be undertaken without the inclusion of mitigation, unless potential impacts clearly can be avoided through the modification or redesign of the plan or project, in which case the screening process is repeated on the altered plan. The greatest level of evidence and justification is needed in circumstances where the process ends at the screening stage on grounds of no impact.

According to DAHG (2012) Marine NIS Guidelines, AA Screening should include:

1. Description of the plan or project, and local site or plan area characteristics;
2. Identification of relevant SAC, compilation of information on their qualifying interests and conservation objectives;
3. Assessment of the likely effects – direct, indirect, cumulative – undertaken on the basis of available information (desk study, field survey and/or primary research), which will result in a screening assessment and screening statement.

### **3.2.2. Stage 2. Appropriate Assessment (NIS)**

This stage considers whether the plan or project, alone or in combination with other projects or plans, will have an adverse effect on the integrity of a Natura 2000 site, and includes any mitigation measures necessary to avoid, reduce or offset negative effects. The proponent of the plan or project will be required to submit a **Natura Impact Statement (NIS)**, i.e. the report of a targeted professional scientific examination of the plan or project and the relevant Natura 2000 sites, to identify and characterise any possible implications for the site in view of the site's conservation objectives, taking account of in combination effects. This should provide information to enable the competent authority to carry out the appropriate assessment. If the assessment is negative, i.e. adverse effects on the integrity of a site cannot be excluded, then the process must proceed to Stage 4, or the plan or project should be abandoned. The AA is carried out by the competent authority, and is supported by the NIS.

### **3.2.3. Stage 3. Alternative Solutions**

This stage examines any alternative solutions or options that could enable the plan or project to proceed without adverse effects on the integrity of a Natura 2000 site. The process must return to Stage 2 as alternatives will require appropriate assessment in order to proceed. Demonstrating that all reasonable alternatives have been considered and assessed, and that the least damaging option has been selected, is necessary to progress to Stage 4.

### **3.2.4. Stage 4. Imperative Reasons of Overriding Public Interest (IROPI)/Derogation**

Stage 4 is the main derogation process of Article 6(4) which examines whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project that will have adverse effects on the integrity of a Natura 2000 site to proceed in cases where it has been established that no less damaging alternative solution exists. The extra protection measures for Annex I priority habitats come into effect when making the IROPI case<sup>1</sup>. Compensatory measures must be proposed and assessed. The Commission must be informed of the compensatory measures. Compensatory measures must be practical, implementable, likely to succeed, proportionate and enforceable, and they must be approved by the Minister.

## **4. Stage 1: Appropriate Assessment Screening**

### **4.1. Description of Proposed Plan and Site Characteristics**

#### **4.1.1. Description of the Proposed Activity**

##### **4.1.1.1. Background**

Rosslare Europort is situated in the southeast of Ireland, c. 12km southeast of Wexford town and c. 9km north of Carnsore Point. It is a major entry and exit point for freight traffic and passengers between Ireland and the UK/Continental Europe namely Fishguard, Cherbourg, Pembroke and Roscoff.

During the storms of winter 2013/2014, there was unprecedented and substantial sediment deposition in the approach channel of Rosslare Europort. A survey revealed that a sand bank encroached 50m or more into the channel which led Rosslare Europort authorities to set up initial restrictions of an exclusion zone at the Breakwater and the width of the navigation channel was reduced by 100m. In February 2014, additional restrictions were necessary due to further sand deposition in the approach channel and the inner harbour at berth 4. This buildup of sand caused the closure of Berth 4 and navigational difficulties in certain weather conditions for vessels berthing at Berth 3. If the sediment which has built up in the approach channel and harbour is not removed, additional closures of Berths 2 and 3 may be necessary which would result in the cancellation of up to 21 scheduled services per week. Further surveys undertaken in February/March 2014

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<sup>1</sup> IROPI reasons that may be raised for sites hosting priority habitats are those relating to human health, public safety or beneficial consequences of primary importance to the environment. In the case of other IROPI, the opinion of the Commission is necessary and should be included in the AA

estimated that approximately 80,000 – 100,000m<sup>3</sup> of sand accumulated in the approach channel and harbour over the course of the storms of winter 2013/2014 (Iarnród Éireann, 2014).

There has been no requirement for regular or periodic maintenance dredging at Rosslare Europort since the port was reconfigured in the late 1970s. A 2011 dredging and beach nourishment campaign was the only non-capital dredging campaign undertaken in the intervening period. This campaign was carried out under license and involved the dredging of approximately 55,000m<sup>2</sup> of the approach channel and harbour, removing approximately 45,000m<sup>3</sup> of accumulated sand to maintain the required minimum depth (Iarnród Éireann, 2014). The current maintenance dredging and beach nourishment campaign is a stand-alone project and the area to be dredged is the same as was dredged in 2011. Previous capital dredging projects took place in 1992/1993 and 1996/1997 in order to increase the chartered depth to a minimum of -7.2m CD.

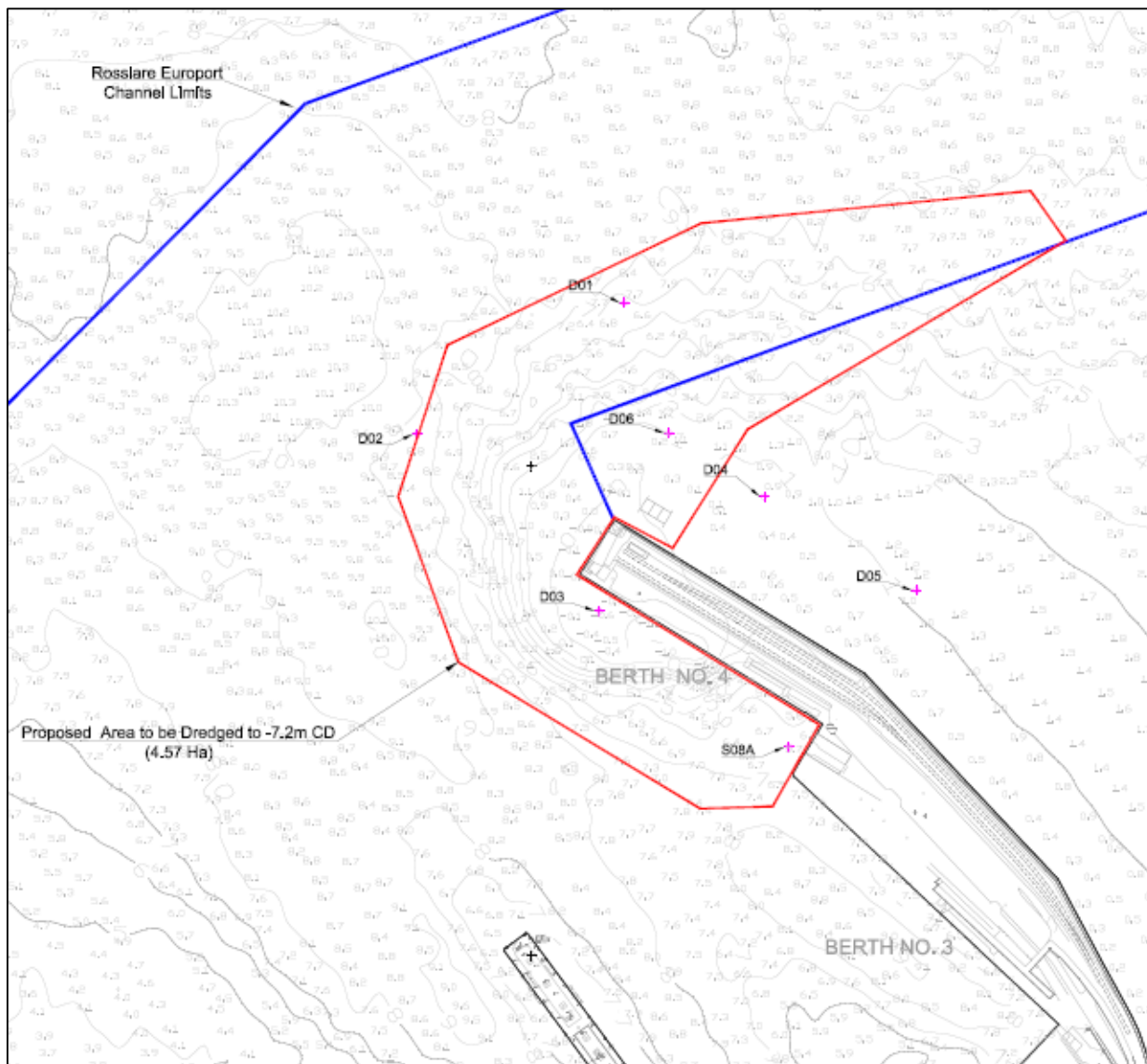
When dredging is for the purpose of maintenance, an EIA is not required - Schedule 5 of the Planning and Development Regulations 2001 – 2012:

*“Part 2, 2 (d) Extraction of stone, gravel, sand or clay by marine dredging (other than maintenance dredging), where the area involved would be greater than 5 hectares or, in the case of fluvial dredging (other than maintenance dredging), where the length of river involved would be greater than 500 metres”.*

#### **4.1.1.2. Investigation/Development Phase**

A hydrographic survey was carried out in May 2014 to ascertain the quantity of sediment that needed to be removed from the approach channel and harbour particularly at Berth 4 to provide chartered depths of -7.2m CD for navigation. The quantity of sediment to be removed is approximately 85,000m<sup>3</sup>. The area to be dredged is estimated at 4.57 Ha and can be seen in Figure 4.1.

The dredging methodology is dependent on the dredger proposed for use by the successful contractor. Dredging will be carried out by hydraulic means by either a Cutter Suction Dredger (CSD) and Split Hopper Barge (SHB) or a Trailer Suction Hopper Dredger (TSHD). In areas which are inaccessible to suction dredgers such as along the quay walls, additional mechanical or hydrodynamic dredging will be carried out.



**Figure 4.1:** Area to be dredged outlined in red.

To start the dredging operations, the CSD/SHB or TSHD will sail to the area to be dredged. Depending on the dredger being used the following will occur:

- TSHD: Once in the vicinity of the dredging area, the TSHD will lower the drag head(s) to the bottom and dredging can commence. The centrifugal dredge pump, installed inside the dredger, takes up a mixture of water and soil through the drag head and suction pipe and pumps the mixture into its hopper. The soil will settle in the hopper and the water is discharged through an adjustable overflow system.
- CSD/SHB: Once in the vicinity of the dredging area, the box anchors are set in place and the cutter ladder is lowered. The rotating cutter head begins cutting the hard sediment into fragments. A suction inlet located beneath the cutter head is connected by a suction tube directly to one or more centrifugal

pumps. The vacuum force at the suction inlet sucks up the loosened material. Moving the box anchors and spud poles allows the CSD to change positions. The CSD discharges the dredged material directly to a SHB.

When the draught of the SHB or TSHD vessel reaches capacity (1,500m<sup>3</sup>) or when circumstances do not allow for further loading, dredging will be ceased and the suction pipe hoisted on deck. The dredger will fill its hopper in each of the identified dredging areas as efficiently as possible.

Upon filling its hold the SHB or TSHD will sail to the beach nourishment site following the navigation channel shown in Figure 4.2. The beach nourishment site is 617m wide (east-west), 366m in length (north-south) and covers an area of 0.195km<sup>2</sup>. It is located c. 2.2km northwest of the breakwater and c. 550m east of Rosslare village and strand. Once at the beach nourishment site the vessel will slow to approximately one to two knots. Dumping will be confined to periods when water depths are sufficient to allow access draft for the dredging vessel. The sand will be evenly distributed over the site by release through the hull of the split hopper dump barge or the trailer suction hopper dredger. Ultimately, the aim is that the spoil will be transported over time onto Rosslare Strand.

The project is estimated to take 15-20 days, working 24/7 and is planned for October 2014, although the schedule may alter depending on the dredger proposed by the successful contractor, along with other maritime and meteorological effects.

The dredging regime will employ best-practice measures to minimise the release of suspended particulate matter within the water column by:

- Maintaining a low speed during dredging;
- Only utilising water jets when necessary to ensure adequate production;
- Minimise the use of overflowing whenever possible;
- Set a maximum density limit of 1.1t/m<sup>3</sup> for automatic light mixture overboard; and
- Dredging will be undertaken as efficiently as possible so that the number of dredger movements is minimised.

The disposal regime will employ the following best practice measures:

- Maintain an acceptable speed to ensure against losses during transit during inclement weather;
- Division of the disposal site into sectors with each used in turn; and
- Ensure a low speed is maintained during disposal to disperse material over disposal area.

The above measures are standard best practice and serve to minimise any possible impacts on the environment.

In addition to best practice, the dredging vessel will also be required to implement an Environmental Plan for the works to include the following items:

- All personnel will be appropriately trained about environmental issues prior to the start of the operation;
- All equipment will be in good condition to avoid spillage or discharge of oil, smoke and excessive noise;
- Refuelling will be carried out by competent and trained people away from any environmentally sensitive areas; and dredger to be moored up securely;
- An appropriate waste container will be placed to collect waste before the final disposal by authorised company and hazardous material storage areas will be identified; labelled, and properly marked and fitted with spill containment systems;
- Dredger will be checked for any fuel / oil leaks on a regular basis by the crew;
- Any spills will be reported immediately to the site agent/authorities;
- In the event of a major spill due to damage to the dredger. Locate and isolate, inform harbour authorities, Project manager and environmental agency;

The implementation of an environmental plan for the works will be in addition to the general requirements for vessels under the MARPOL 73/75 Convention which includes the requirement to have a Shipboard Marine Pollution Emergency Plan.

In addition to the above requirements, the Rosslare Europort Oil Spill Contingency Plan (see Appendix 2) will be enacted in the event of an oil spill within the Rosslare Europort Harbour Limits. Overflow from dredging is controlled by agreement with the EPA, and terms of contract with the dredge company. In addition, Wexford County Council has a Coastal Pollution Response Plan and there is a South East Oil Pollution Forum working together towards emergency response. Rosslare Europort works to this.

Iarnród Éireann is unaware of any existing or planned developments in the vicinity that would act in conjunction with the proposed campaign.



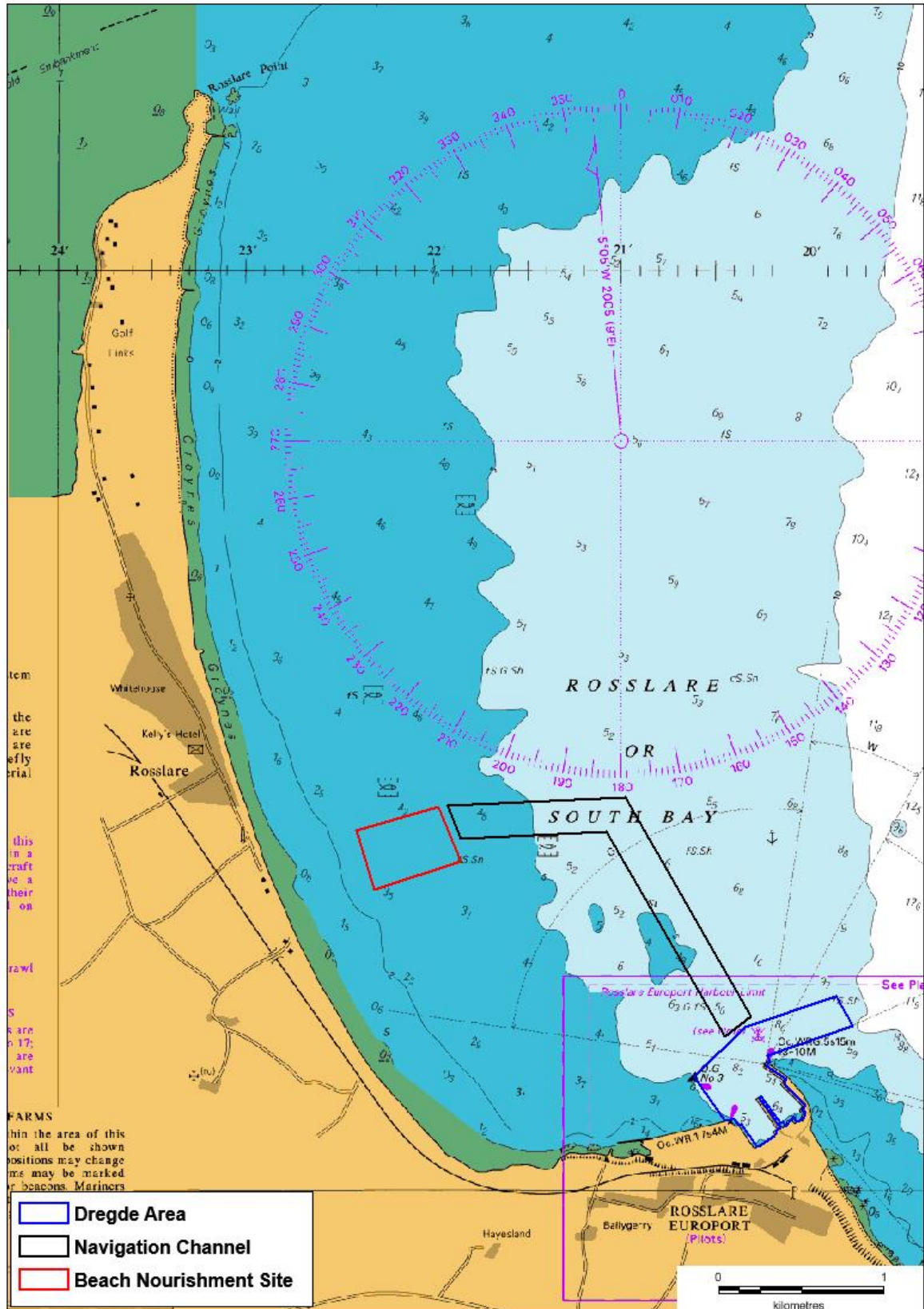


Figure 4.2: Location of the dredge area, nourishment site and route to nourishment site.

#### 4.1.1.3. Operational Phase

There is no operational phase to the proposed dredging and beach nourishment campaign. Once the dredging is complete Rosslare Europort can operate as normal.

#### 4.1.2. Description of Receiving Environment

##### 4.1.2.1. Rosslare Europort & Nourishment Site

Both the dredge site at Rosslare Europort and the beach nourishment site lie in a coastal water body in the southwestern Irish Sea. The beach nourishment site is c. 4.5km south-southeast of Rosslare Point which marks the south-western extreme of Wexford Harbour and the lower River Slaney Estuary.

Rosslare Europort is one of the two major ports on the east coast of Ireland, catering for RO-RO passenger and Freight services with sailings to mainland Britain and mainland Europe. Commercial and recreational fishing also takes place in the area.

Kilrane Harbour (small boat harbour) which is west of Rosslare Europort comprises sand, shingle and small stones with a fine coating of mud at the low water mark on which some *Fucus vesiculosus* and *F. serratus* grow (AQUAFAC, 2000). Intertidal fauna within Kilrane Harbour includes *Deshayesorchestia deshayesii* and other talitrid crustaceans in the upper shore, along with the polychaete *Spio filicornis*, talitrids, the bivalve mollusc *Abra alba* and juvenile Mytilidae (mussels) in the mid shore and the polychaetes *Lanice conchilega* and *Kefersteinia cirrata* and the molluscs *Abra alba*, juvenile Mytilacea and *Ruditapes decussatus* in the lower shore. West of Kilrane Harbour the intertidal comprises a mixture of bedrock, rocks, pebbles and gravel. Intertidal flora here include the lichens *Verrucaria* and *Xanthoria* in the splash zone, along with *Pelvetia canaliculata*, *Entromorpha*, *Ascophyllum nodosum*, *Fucus spiralis*, *F. vesiculosus*, *Chondrus crispus*, *F. serratus*, *Laminaria digitata* and encrusting reds from the upper to lower shore. Fauna of this intertidal zone include *Littorina littorea*, *Gibbula umbilicalis*, *Nucella lapillus*, *Patella vulgata*, *M. neritoides*, *Pomatoceros* sp., *Lanice conchilega*, *Littorina fabalis* and barnacles (AQUAFAC, 2000).

Subtidal sediments west of Rosslare Europort consist of fine to medium sands with faunal communities comprising 21 polychaetes including *Lagis koreni*, *Cirratulus cirratus* and *Lanice conchilega*; 10 molluscs including *Abra alba*, *Ruditapes decussatus* and *Tellina fabula*; 2 echinoderms including *Amphiura brachiata* and 1 Phoronid *Phoronis hippocrepia* (AQUAFAC, 2000).

The harbour area itself was surveyed in 2008 and sediment type ranged from fine sand to gravel (AQUAFAC, 2008). Four biotopes were observed throughout the harbour area: *Nephtys hombergii* and *Tubificoides* spp. in variable salinity infralittoral soft mud (SS.SMU.SMuVS.NhomTubi); *Sertularia cupressina* and *Hydrallmania falcate* on tide-swept circalittoral cobbles and pebbles (SS.SSA.IFiSa.ScupHyd); *Fabulina fabula* and *Magelona mirabilis* with venerid bivalves and amphipods in infralittoral compacted fine sand (SS.SSA.IMuSa.FfabMag) and Piddocks with a sparse associated fauna in upward-facing circalittoral very soft chalk or clay (CR.MCR.SfR.Pid).

The proposed dredge and beach nourishment areas are not within a Natura 2000 site, however a number of these Natura 2000 sites do surround the areas in question. These include Carnsore Point cSAC southeast of Rosslare Europort, Long and Blackwater Banks to the east of the sites, The Raven SPA and Raven Point Nature Reserve to the north, with Wexford Harbour and Slobs SPA and Slaney River Valley cSAC to the northwest. Mobile fauna from these sites may utilise areas within or close to the dredge or beach nourishment site. Such mobile fauna include harbour seal *Phoca vitulina* and grey seal *Halichoerus grypus* which are Qualifying Interests of Slaney River Valley cSAC and Saltee Island cSAC respectively. Migratory species such as sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, twaite shad *Alosa fallax* and Atlantic salmon *Salmo salar* are qualifying interests of Slaney River Valley cSAC and may pass through or close to the dredge or beach nourishment sites over the course of their life cycle. Diving bird species such as red-throated diver *Gavia stellata*, great crested grebe *Podiceps cristatus*, cormorant *Phalacrocorax carbo*, common scoter *Melanitta nigra*, red-breasted merganser *Mergus serrator* and little tern *Sterna albifrons* may travel from surrounding SPAs to utilise waters within or close to the dredging and beach nourishment sites. Other bird species such as oystercatcher *Haematopus ostralegus*, golden plover *Pluvialis apricaria*, grey plover *Pluvialis squatarola*, lapwing *Vanellus vanellus*, knot *Calidris canutus*, sanderling *Calidris alba*, dunlin *Calidris alpina*, black-tailed godwit *Limosa limosa*, bar-tailed godwit *Limosa lapponica*, curlew *Numenius arquata*, redshank *Tringa totanus*, black-headed gull *Chroicocephalus ridibundus* and lesser black-backed gull *Larus fuscus* may move outside the Natura 2000 sites for which they are designated to feed on exposed intertidal areas close to the dredge or beach nourishment sites.

#### 4.1.2.2. Rosslare Strand

Rosslare Strand runs between Rosslare Europort and Rosslare Point and the beach nourishment site is c. 550m east of it. The sediment type along this strand consists mainly of sand. A broad talitrid zone is present near the strandline (Healy & McGrath, 1998). The dominant species recorded by Healy & McGrath (1998) were the amphipods *Haustorius arenarius* and *Pontocrates altarnarinus* and the isopod *Eurydice pulchra*. Rosslare Strand has had Blue Flag status since 2004. The strand is relatively gently sloping with dunes systems to the

rear. There is no significant vegetation growing in the waters off the beach. There is a designated Bathing Water area on Rosslare Strand which is approximately 0.1 km<sup>2</sup> in area and 0.5 km long. The Bathing Water quality here is classified as good quality (WWW 1). The beach is microtidal with a tidal range of less than 2m varying from 1.5-2m. The tidal action causes tidal streams, ranging from 1-2 m/s (Sisternans & Nieuwenhuis, 2004). The tidal range at Rosslare Europort ranges from 0.6m-2.3m (WWW 2).

Rosslare Strand is open to waves from the south-southeast around to the north-northeast and with a predominance of wave activity from the southeast, which results from long period swell diffracted into the Irish Sea from the Atlantic and there is a nett wave-induced south to north littoral drift along the shore. Though coasts here are storm influenced they receive only c. 20% of the wave energy levels occurring on open Atlantic coasts (Sisternans & Nieuwenhuis, 2004). At Rosslare Strand, coastal erosion has been a problem for many years. At the north of the Strand, a spit extended much further north of its present position and to the south recession of the glacial cliffs has taken place, while in the middle section of the Strand, recession of the dune ridge has also occurred (Sisternans & Nieuwenhuis, 2004). Rosslare Strand is a popular fishing location and is also used by a limited number of surfers, windsurfers and canoeists.

#### **4.1.2.3. Marine Mammals**

The IWDG sightings database reveal 48 sightings from January 2009 to July 2014 encompassing an area from Cahore Point (c. 35km north of Rosslare Europort) to Crossfarnoge Point (c. 20km southwest of Rosslare Europort). Figure 4.3 shows the data in graphical form. All records are validated and available on [www.iwdg.ie](http://www.iwdg.ie). These 48 sightings comprised 217 individuals. In total, 5 species were recorded from the area with a further 4 species not identifiable to species level were recorded. Highest density of sightings and numbers of individuals were recorded from around Carnsore Point (22 sightings [45.8%] comprising 77 individuals [35.5%]).

Since 2009, Risso's dolphin was the most abundant in the area (75 individuals; 34.6%) followed by bottlenose dolphin (44 individuals, 20.3%), 'dolphin' sp., possible harbour porpoise (35 individuals, 16.1%) and harbour porpoise (32 individuals, 14.7%). Risso's dolphin was observed just north of the Navigation Channel, off Greenore Point and off Crossfarnoge Point with the majority observed off Carnsore Point. All sightings of Risso's dolphin were made between May and August with the largest group (19 individuals) observed off Carnsore Point in 2010. Six individuals were observed north of the Navigation Channel in July 2013. The bottlenose dolphin was observed just north of the beach nourishment site, off Greenore Point and off Crossfarnoge Point. All sightings of bottlenose dolphins were made in April and June with the largest group (15 individuals) observed off Rosslare Strand (north of beach nourishment site) and off Kilmore Quay in April 2009.

'Dolphin' sp. (possible harbor porpoise) were observed just north of the navigation channel, off Tuskar Rock, of Crossfarnoge Point and between The Raven Point and Cahore Point. Sightings were made from May to July and in October and December with the largest group (17 individuals) observed north of the navigation channel in July 2012. The harbour porpoise was observed off Crossfarnoge Point, off Carnsore Point, off Greenore Point and just north of The Raven Point. Sightings were made in January, February, April to July and November and the largest group (6 individuals) were observed off Carnsore Point in November 2011. Other species observed in lower numbers were 'dolphin' sp. (21 individuals, 9.7%), the humpback whale (4 individuals, 1.8%), large whale sp. (2 individuals, 0.9%) and minke whale (1 individual, 0.5%).

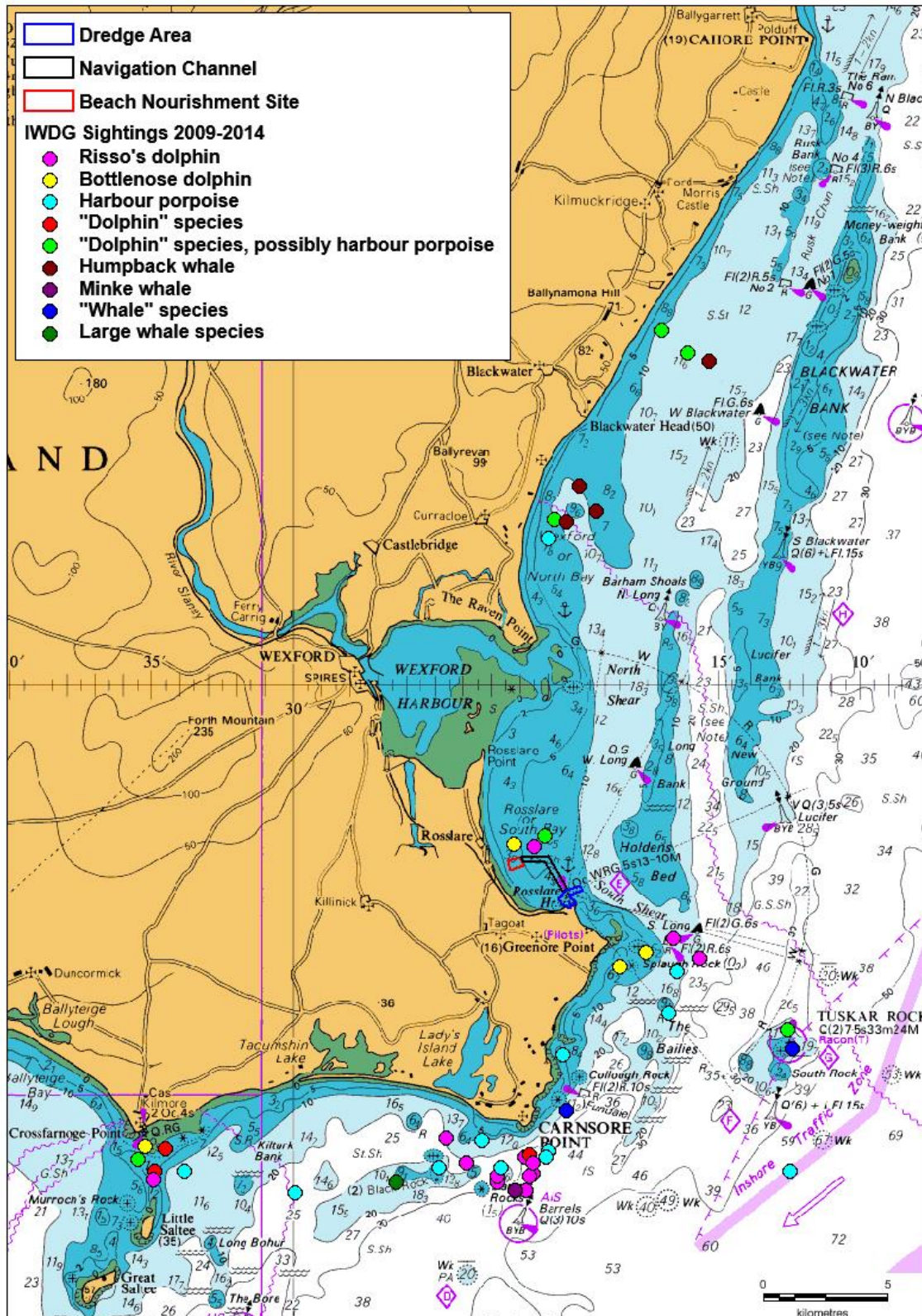


Figure 4.3: Cetacean sightings from January 2009 to July 2014 from Cahore Point to Crossfarnoge Point ([www.iwdg.ie](http://www.iwdg.ie)).

Figure 4.4 shows a breakdown of these sightings by species and Figure 4.5 shows a breakdown of these sightings by number of individuals. Risso’s dolphin was the most commonly sighted cetacean in the area (15 sightings, 31%), followed by the harbour porpoise (12 sightings, 25%), ‘dolphin’ sp. possibly harbor porpoise (6 sightings, 13%), bottlenose dolphin (4 sightings, 8%) and humpback whale (4 sightings, 8%). In terms of numbers of individuals, the Risso’s dolphin was the most numerous with 75 individuals (35%), followed by the bottlenose dolphin with 44 individuals (20%), ‘dolphin’ sp. possible harbor porpoise (35 individuals, 16%), harbor porpoise (32 individuals, 15%) and ‘dolphin’ sp. (21 individuals, 10%). Table 4.1 shows the average number of individuals per sighting per species. The bottlenose dolphin had the highest number of individuals per sighting (11) followed by the ‘dolphin’ sp. (7) and ‘dolphin’ sp. (possibly harbour porpoise) with 5.7.

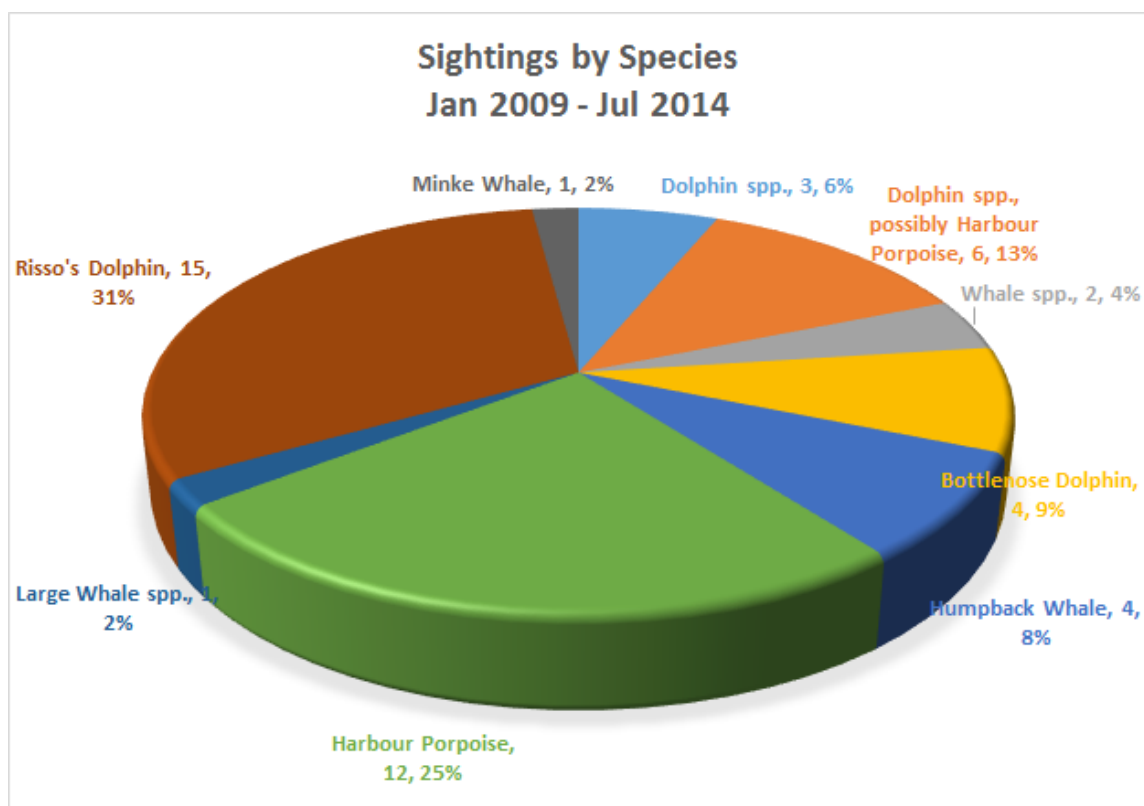


Figure 4.4: Number of sightings by species Jan 2009 – Jul 2014 ([www.iwdg.ie](http://www.iwdg.ie)).

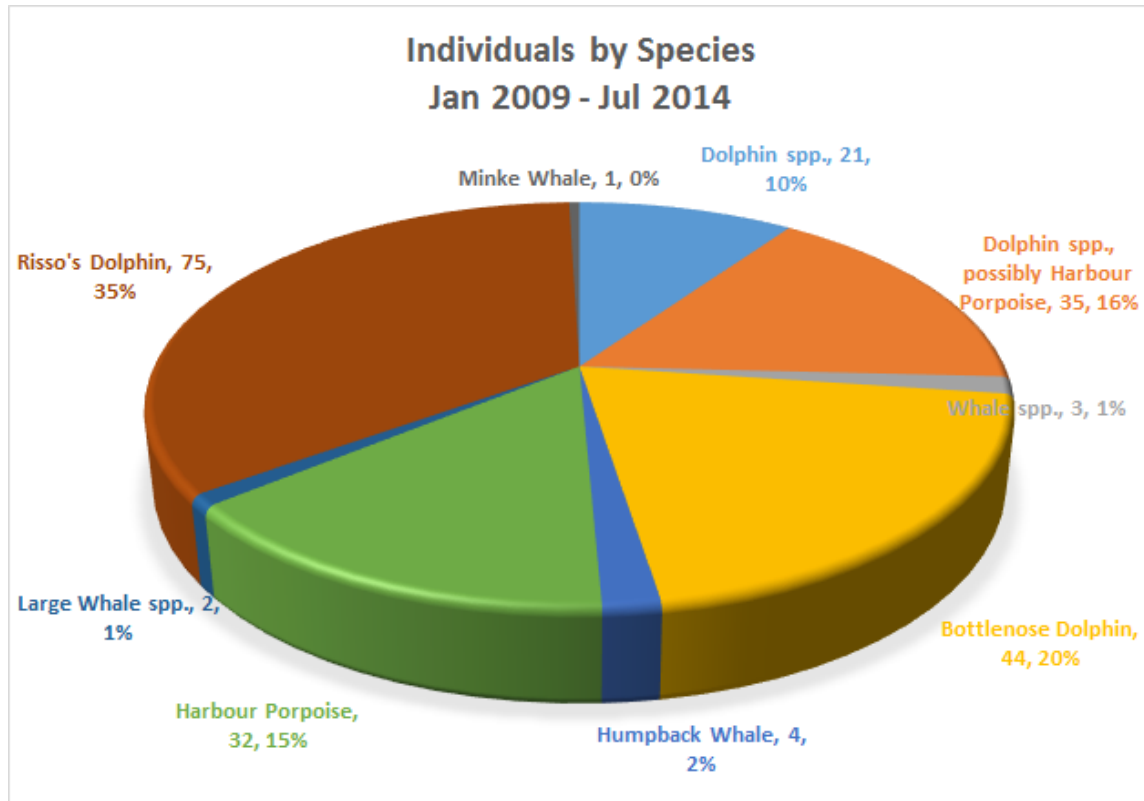


Figure 4.5: Number of individuals by species Jan 2009 – Jul 2014 ([www.iwdg.ie](http://www.iwdg.ie)).

Table 4.1: Average number of individuals per sighting ([www.iwdg.ie](http://www.iwdg.ie)).

Species	Average no. individuals / sighting
Dolphin spp.	7
Dolphin spp., possibly Harbour Porpoise	5.8
Whale spp.	1.5
Bottlenose Dolphin	11
Humpback Whale	1
Harbour Porpoise	2.7
Large Whale spp.	2
Risso's Dolphin	5
Minke Whale	1

Figures 4.6 and 4.7 shows the breakdown of sightings and number of individuals by month and Table 3.2 shows the average number of individuals per sighting per month. June has the highest number of sightings (15 sightings, 31%) followed by January (8 sightings, 17%), May and July (6 sightings, 13%). March and September had no sightings and October and February had 1 sighting each (2%). June has the highest number of individuals (80 individuals, 37%) followed by April (47 individuals, 20%), July (30 individuals, 14%) and May (19 individuals,



8%). March and September had no sightings and October and February had 4 individuals each (2%). Table 4.2 shows the number of individuals per sighting per month. April had 8.6 and June 9.3 individuals per sighting.

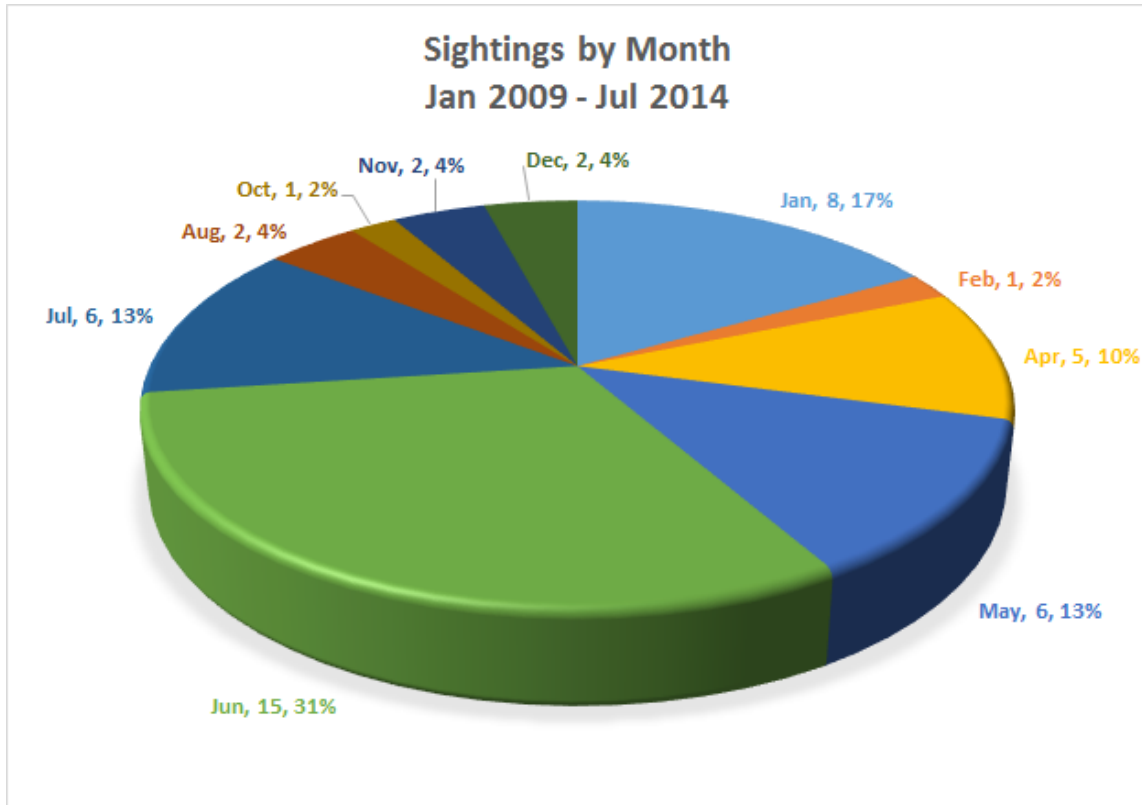


Figure 4.6: Number of sightings per month Jan 2009 – Jul 2014 (www.iwdg.ie).

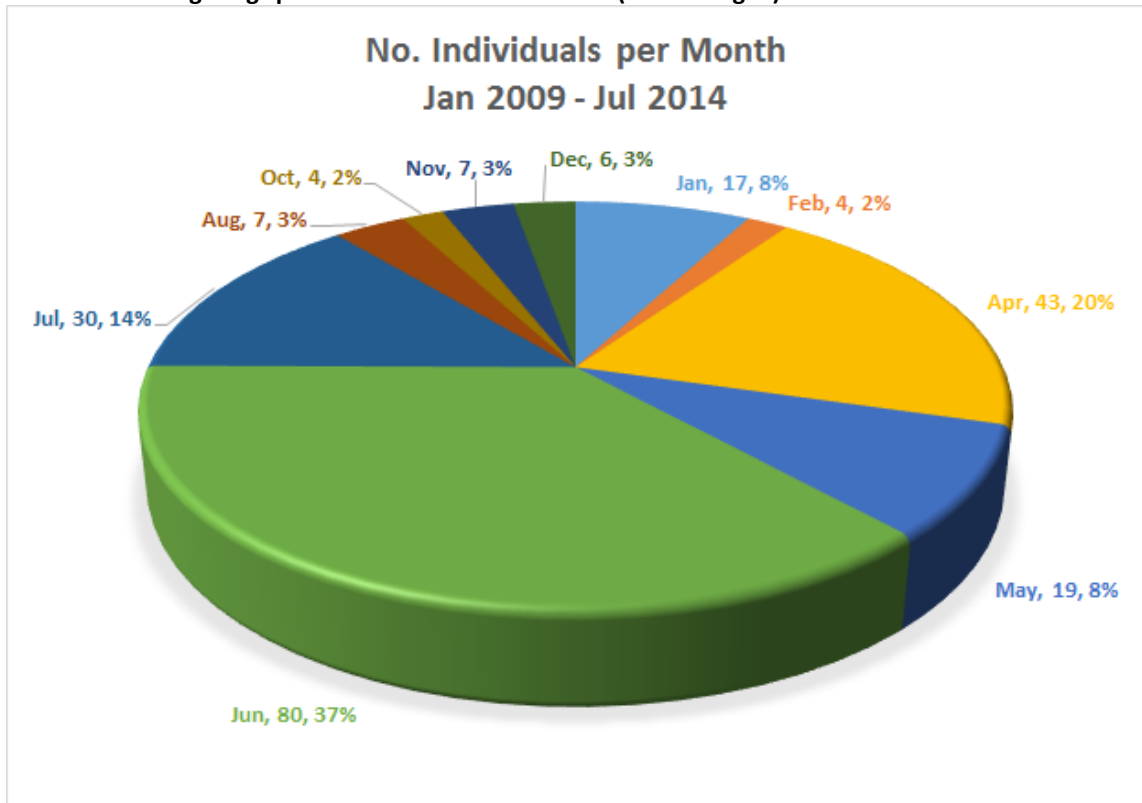


Figure 4.7: Number of individuals per month Jan 2009 – Jul 2014 (www.iwdg.ie).

**Table 4.2: Average number of individuals per sighting per month (www.iwdg.ie).**

Month	Average no. individuals / sighting
Jan	2.1
Feb	4
Mar	-
Apr	8.6
May	3.2
Jun	5.3
Jul	5
Aug	3.5
Sep	-
Oct	4
Nov	3.5
Dec	3

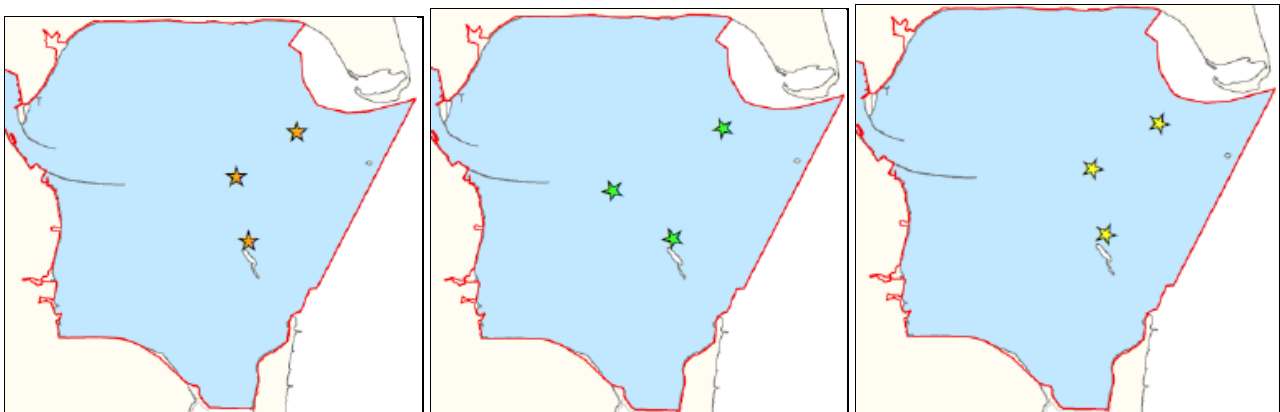
In addition to the 5 species (and 4 unidentifiable to species level) observed from 2009 to 2014, an additional 2 species were observed in the area prior to January 2009. The fin whale (1 individual) was observed once off Crossfarnoge Point in December 2004 and the common dolphin was observed off Carnsore Point, Tuskar Rock, north of The Raven Point and off Rosslare Strand between 1994 and 2005 in numbers ranging from 2 to 20.

In summary, of the 48 sightings from January 2009 to July 2014 from Cahore Point to Crossfarnoge Point, 7 were within 5km of the proposed dredging and beach nourishment site. These 7 sightings accounted for 27.6% of the individuals recorded from the area.

In addition to cetaceans, two species of pinnipeds are present in the general area, the harbour seal *Phoca vitulina* and the grey seal *Halichoerus grypus*. Both species have established themselves in terrestrial colonies (or haul-outs) along all coastlines of Ireland, which they leave when foraging or moving between areas and to which they return to rest ashore, rear young, engage in social activity, etc. The haul-out groups of harbour seals have tended historically to be found among inshore bays and islands, coves and estuaries (Lockley, 1966; Summers, 1980), particularly around the hours of lowest tide. The grey seal breeds on exposed rocky shores, on sand bars or in sea caves with ready access to deep water. Other haul-out areas for the grey seal are located on exposed rocky areas or steeply shelving sandbanks.

There are harbour seal breeding, moulting and resting sites in Wexford Harbour (Slaney River Valley cSAC IE000781) and c. 6km northwest of the beach nourishment site and c. 8km northwest of the dredge area (see

Figure 4.8). Harbour seals here occupy both aquatic habitats and intertidal shorelines that become exposed during the tidal cycle. The species is present at the site throughout the year during all aspects of its annual life cycle which includes breeding (May-July approx.), moulting (August-September approx.) and non-breeding foraging and resting phases (NPWS, 2011a). A total of 17 harbour seals were recorded during the harbour seal population assessment in August 2003 within Slaney River Valley cSAC (Cronin *et al.*, 2004). Additional records from within the site comprised 22 seals of all ages ashore in early September 2007 and 27 in early September 2009 (NPWS, 2011a). This species may forage in the area of the proposed dredging and beach nourishment campaign.



**Figure 4.8: Known breeding, moulting and resting sites in Wexford Harbour (NPWS, 2011).**

A grey seal breeding site was identified in Wexford Harbour (Raven Point sandbar), on Great Saltee Island and on Little Saltee Island during the 2005 population survey (O’Cadhla *et al.*, 2005) (see Figure 4.9). The Raven Point sandbar is located c. 7km north of the beach nourishment site and the Saltee Island sites are 20+km southwest of the dredge area. Population estimates from the 2005 census give a population size of 4.5 at Raven Point sandbar and 733.5 at Great Saltee Island. The 2007 moult survey (O’Cadhla & Strong, 2007) there was an estimated haul out group size of 130 at Raven Point sandbar and 246 on Great Saltee Island. Grey seals breed from late August to December and moult from November to April. This species may forage in the area of the proposed dredging and beach nourishment campaign.

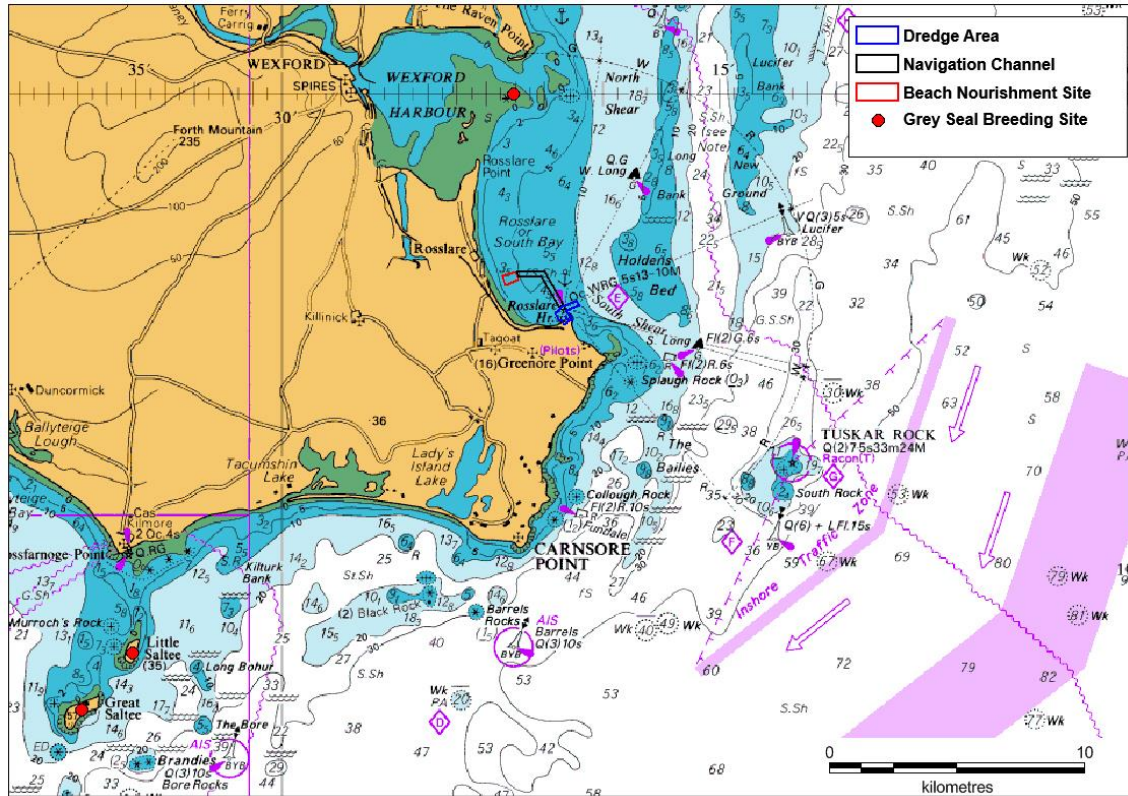


Figure 4.9: Grey seal breeding sites in the vicinity of the dredge and beach nourishment sites.

Otter occur in Wexford Harbour (Slaney River Valley cSAC) and they can forage 80m from shore (NPWS, 2007, Krukk, 2006) and can travel distances of 500m across estuaries and out to islands (De Jongh & O’Neill, 2010). They have the potential to occur in the dredge and beach nourishment sites.

#### 4.2. Identification of Relevant Natura 2000 Sites

##### 4.2.1. Relevant Natura 2000 Sites and Qualifying Interests/Special Conservation Interests

Adopting a precautionary principle, the Natura 2000 sites within 15km of the dredge and beach nourishment areas were included in this assessment. All are listed in Table 4.3 and can be seen in Figure 4.10. Of these, the Natura 2000 sites deemed relevant and **screened in** are those which have Conservations Objectives or Qualifying Interests (QIs)/Special Conservation Interests (SCIs) which may be impacted by the proposed dredging or beach nourishment activities.

A number of Natura 2000 sites or individual qualifying interests within the 15km zone are either

- a) at a location or distance too great to be impacted by the dredging and beach nourishment campaign, or

- b) they are in not connected to the subtidal/intertidal environment and therefore cannot be directly or indirectly impacted by the proposed programme of works.

These Natura 2000 sites are **screened out** and they can also be seen in Table 4.3.

Non-relevant sites and QIs/SCIs are not assessed further in this Natura Impact Statement.

**Table 4.3: Identification of relevant Natura 2000 sites. All those screened in are highlighted.**

Natura 2000 Site	Qualifying Interest/	Distance from Dredge or Beach Nourishment Site	Potential Impacts	Screened In / Out
Long Bank cSAC IE002161	1110 Sandbanks which are slightly covered by sea water all the time	1.4km east	Potential Interaction with 1110 sandbanks – due to dispersion of sediment	Screened In
Blackwater Bank cSAC IE002953	1110 Sandbanks which are slightly covered by sea water all the time	4.9km east	Potential Interaction with 1110 sandbanks – due to dispersion of sediment	Screened In
Carnsore Point cSAC IE002269	1140 Mudflats and sandflats not covered by seawater at low tide 1170 Reefs	0.98km southeast	Potential Interaction with 1140 mud/sandflats and 1170 reefs – due to dispersion of sediment	Screened In
Slaney River Valley cSAC IE000781	1029 Freshwater pearl mussel ( <i>Margaritifera margaritifera</i> ) 1095 Sea lamprey ( <i>Petromyzon marinus</i> ) 1096 Brook lamprey ( <i>Lampetra planeri</i> ) 1099 River lamprey ( <i>Lampetra fluviatilis</i> ) 1103 Twaite shad ( <i>Alosa fallax fallax</i> ) 1106 Salmon ( <i>Salmo salar</i> ) 1130 Estuaries 1140 Mudflats and sandflats not covered by seawater at low tide 1355 Otter ( <i>Lutra lutra</i> ) 1365 Harbour Seal <i>Phoca vitulina</i> 3260 Water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation 91A0 Old sessile oak woods with <i>Ilex</i> and <i>Blechnum</i> in British Isles 91E0 Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> )	3.3km northwest	Potential Interaction with 1095 Sea lamprey, 1103 Twaite shad, 1106 Salmon, 1130 Estuaries, 1140 Mudflats and sandflats, 1355 Otter and 1365 Harbour Seal <i>Phoca vitulina</i> - due to the dredging and disposal activity and dispersion of sediment. The others are not marine habitats or species.	Screened In
Raven Point Nature Reserve cSAC IE000710	1140 Mudflats and sandflats not covered by seawater at low tide 1210 Annual vegetation of drift lines 1330 Atlantic salt meadows ( <i>Glauco-Puccinellietalia maritimae</i> ) 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)	7.9km north	Potential Interaction with 1140 mud/sandflats– due to dispersion of sediment. The others are not marine habitats.	Screened In

Natura 2000 Site	Qualifying Interest/	Distance from Dredge or Beach Nourishment Site	Potential Impacts	Screened In / Out
	2170 Dunes with <i>Salix repens ssp. argentea (Salix arenariae)</i> 2190 Humid dune slacks			
Saltee Island cSAC IE000707	1140 Mudflats and sandflats not covered by seawater at low tide 1160 Large shallow inlets and bays 1170 Reefs 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] 1364 Grey seal ( <i>Halichoerus grypus</i> ) 8330 Submerged or partly submerged sea caves	13.6km southwest	Potential Interaction with 1364 Grey seal - due to the dredging and disposal activity and dispersion of sediment. Distance and location screens the other habitats out.	Screened In
Lady's Island cSAC IE000704	1150 Coastal lagoons 1170 Reefs 1220 Perennial vegetation of stony banks	4.7km southwest	None – due to location, distance and non-marine habitat	Screened Out
Tacumshin Lake cSAC IE000709	1150 Coastal lagoons 1210 Annual vegetation of drift lines 1220 Perennial vegetation of stony banks 2110 Embryonic shifting dunes 2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)	8.9km southwest	None – due to location, distance and non-marine habitat	Screened Out
Screen Hills cSAC IE000708	3110 Oligotrophic waters containing very few minerals of sandy plains ( <i>Littorelletalia uniflorae</i> ) 4030 European dry heaths	14.43km north	None – due to onshore location	Screened Out
The Raven SPA IE004019	A001 Red-throated Diver ( <i>Gavia stellata</i> ) A017 Cormorant ( <i>Phalacrocorax carbo</i> ) A065 Common Scoter ( <i>Melanitta nigra</i> ) A141 Grey Plover ( <i>Pluvialis squatarola</i> ) A144 Sanderling ( <i>Calidris alba</i> ) A395 Greenland White-fronted Goose ( <i>Anser albifrons flavirostris</i> ) A999 Wetlands	4.5km north	Potential Interaction with A001 Red-throated Diver, A017 Cormorant, A065 Common Scoter, A141 Grey Plover, A144 Sanderling, A999 Wetlands– due to the dredging and disposal activity and dispersion of sediment. Others do not forage in area of interest.	Screened In
Wexford Harbour and Slob SPA IE004076	A004 Little Grebe ( <i>Tachybaptus ruficollis</i> ) A005 Great Crested Grebe ( <i>Podiceps cristatus</i> ) A017 Cormorant ( <i>Phalacrocorax carbo</i> ) A028 Grey Heron ( <i>Ardea cinerea</i> )	2km west	Potential Interaction with A004 Little Grebe, A005 Great Crested Grebe	Screened In

Natura 2000 Site	Qualifying Interest/	Distance from Dredge or Beach Nourishment Site	Potential Impacts	Screened In / Out
	A037 Bewick's Swan ( <i>Cygnus columbianus</i> ) A038 Whooper Swan ( <i>Cygnus cygnus</i> ) A046 Light-bellied Brent Goose ( <i>Branta bernicla hrota</i> ) A048 Shelduck ( <i>Tadorna tadorna</i> ) A050 Wigeon ( <i>Anas penelope</i> ) A052 Teal ( <i>Anas crecca</i> ) A053 Mallard ( <i>Anas platyrhynchos</i> ) A054 Pintail ( <i>Anas acuta</i> ) A062 Scaup ( <i>Aythya marila</i> ) A067 Goldeneye ( <i>Bucephala clangula</i> ) A069 Red-breasted Merganser ( <i>Mergus serrator</i> ) A082 Hen Harrier ( <i>Circus cyaneus</i> ) A125 Coot ( <i>Fulica atra</i> ) A130 Oystercatcher ( <i>Haematopus ostralegus</i> ) A140 Golden Plover ( <i>Pluvialis apricaria</i> ) A141 Grey Plover ( <i>Pluvialis squatarola</i> ) A142 Lapwing ( <i>Vanellus vanellus</i> ) A143 Knot ( <i>Calidris canutus</i> ) A144 Sanderling ( <i>Calidris alba</i> ) A149 Dunlin ( <i>Calidris alpina</i> ) A156 Black-tailed Godwit ( <i>Limosa limosa</i> ) A157 Bar-tailed Godwit ( <i>Limosa lapponica</i> ) A160 Curlew ( <i>Numenius arquata</i> ) A162 Redshank ( <i>Tringa totanus</i> ) A179 Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) A183 Lesser Black-backed Gull ( <i>Larus fuscus</i> ) A195 Little Tern ( <i>Sterna albifrons</i> ) A395 Greenland White-fronted Goose ( <i>Anser albifrons flavirostris</i> ) A999 Wetlands		A017 Cormorant, A054 Pintail, A062 Scaup, A067 Goldeneye, A069 Red-breasted Merganser, A141 Grey Plover, A143 Knot, A144 Sanderling, A149 Dunlin, A157 Bar-tailed Godwit, A160 Curlew, A162 Redshank, A179 Black-headed Gull, A183 Lesser Black-backed Gull, A195 Little Tern, A999 Wetlands – due to the dredging and disposal activity and dispersion of sediment. Others do not forage in area of interest	
Lady's Island Lake SPA IE004009	A051 Gadwall ( <i>Anas strepera</i> ) A179 Black-headed Gull ( <i>Chroicocephalus ridibundus</i> ) A191 Sandwich Tern ( <i>Sterna sandvicensis</i> ) A192 Roseate Tern ( <i>Sterna dougallii</i> ) A193 Common Tern ( <i>Sterna hirundo</i> )	5km southwest	Potential Interaction with A179 Black-headed Gull, A191 Sandwich Tern, A192 Roseate Tern, A193 Common Tern,	Screened In



Natura 2000 Site	Qualifying Interest/	Distance from Dredge or Beach Nourishment Site	Potential Impacts	Screened In / Out
	A194 Arctic Tern ( <i>Sterna paradisaea</i> ) A999 Wetlands		A194 Arctic Tern – due to the dredging and disposal activity and dispersion of sediment. Other species do not forage in area of interest and the location of the wetland habitat screens it out	
Tacumshin Lake SPA IE004092	A004 Little Grebe ( <i>Tachybaptus ruficollis</i> ) A037 Bewick's Swan ( <i>Cygnus columbianus</i> ) A038 Whooper Swan ( <i>Cygnus cygnus</i> ) A050 Wigeon ( <i>Anas penelope</i> ) A051 Gadwall ( <i>Anas strepera</i> ) A052 Teal ( <i>Anas crecca</i> ) A054 Pintail ( <i>Anas acuta</i> ) A056 Shoveler ( <i>Anas clypeata</i> ) A061 Tufted Duck ( <i>Aythya fuligula</i> ) A125 Coot ( <i>Fulica atra</i> ) A140 Golden Plover ( <i>Pluvialis apricaria</i> ) A141 Grey Plover ( <i>Pluvialis squatarola</i> ) A142 Lapwing ( <i>Vanellus vanellus</i> ) A156 Black-tailed Godwit ( <i>Limosa limosa</i> ) A999 Wetlands	8.9km southwest	Potential Interaction with A141 Grey plover– due to the dredging and disposal activity and dispersion of sediment. Other species do not forage in area of interest and the location of the wetland habitat screens it out	Screened In

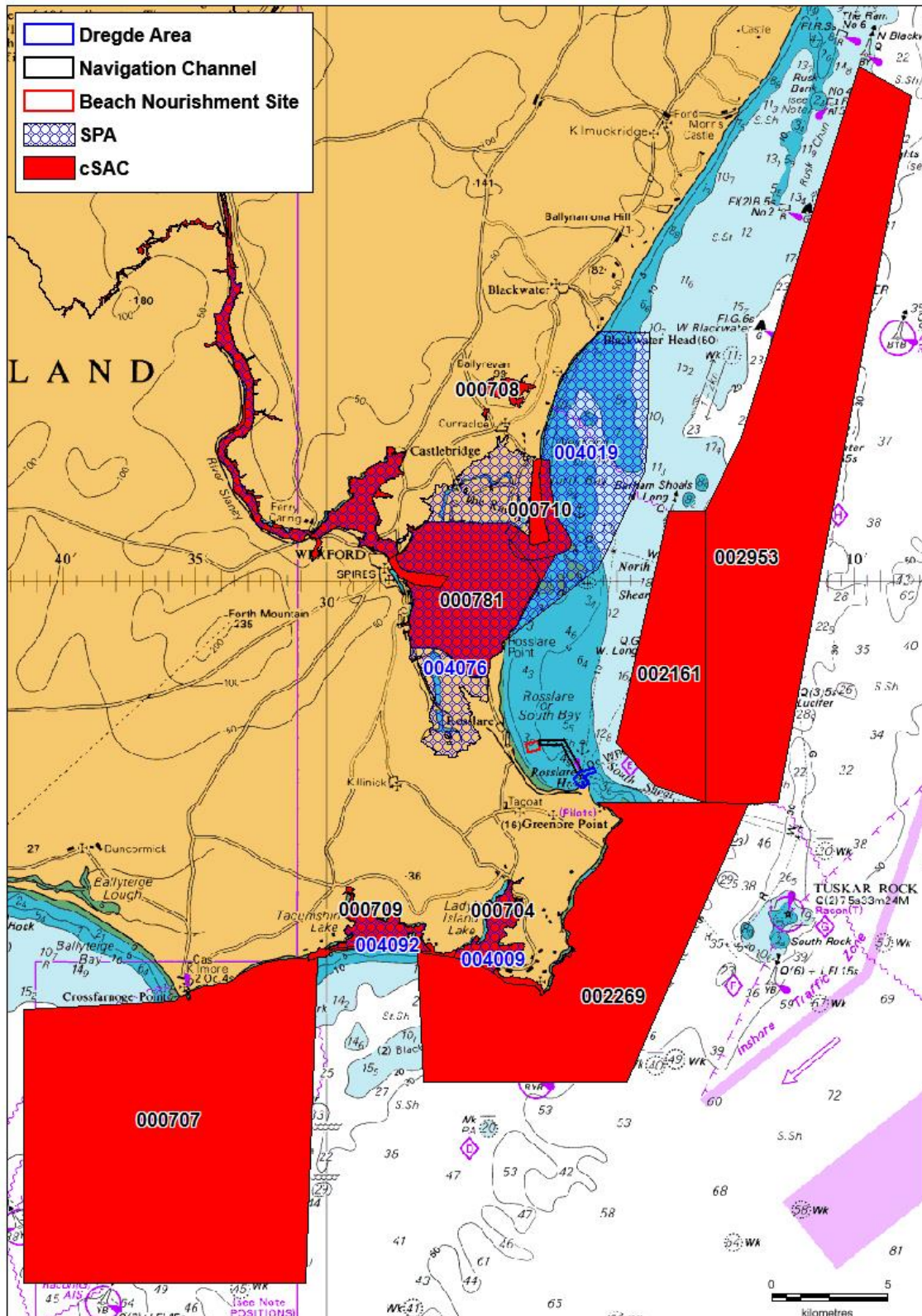


Table 4.4: Location of all cSACs and SPAs within 15km of the proposed dredge and beach nourishment sites.

#### 4.2.2. Conservation Objectives

The QIs/SCIs and conservation objectives for the relevant cSACs and SPAs are given below. Unless otherwise stated in site-specific targets and attributes, the favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- 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.

With the favourable conservation status of a species being 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, and
- 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.

Full site synopses and Conservation Objectives for each Natura 2000 site can be found at [www.npws.ie/protectedsites](http://www.npws.ie/protectedsites).

##### 4.2.2.1. Long Bank cSAC; Site Code: IE002161

The relevant QIs for Long Bank cSAC (IE002161) are:

- 1110 Sandbanks which are slightly covered by sea water all the time

The conservation objectives for Long Bank cSAC are outlined below (NPWS, 2013a).

**Objective:** To maintain the favourable conservation condition of **Sandbanks which are slightly covered by sea water all the time** in Long Bank SAC, which is defined by the following list of attributes and targets:

- Habitat area (ha): The permanent habitat area (estimated as 1319ha) is stable or increasing, subject to natural processes.
- Habitat distribution: The distribution of sandbanks is stable or increasing, subject to natural processes.
- Community distribution (ha): Conserve the following community type in a natural condition: Sand with *Nephtys cirrosa* and *Bathyporeia elegans* community complex.

#### 4.2.2.2. Blackwater Bank cSAC; Site Code: IE002953

The relevant QIs for Blackwater Bank cSAC (IE002953) are:

- 1110 Sandbanks which are slightly covered by sea water all the time

The conservation objectives for Blackwater Bank cSAC are outlined below (NPWS, 2013b).

**Objective:** To maintain the favourable conservation condition of **Sandbanks which are slightly covered by sea water all the time** in Long Bank SAC, which is defined by the following list of attributes and targets:

- Habitat area (ha): The permanent habitat area (estimated as 3488ha) is stable or increasing, subject to natural processes.
- Habitat distribution: The distribution of sandbanks is stable or increasing, subject to natural processes.
- Community distribution (ha): Conserve the following community type in a natural condition: Sand with *Nephtys cirrosa* and *Bathyporeia elegans* community complex.

#### 4.2.2.3. Carnsore Point cSAC; Site Code: IE002269

The relevant QIs for Carnsore Point cSAC (IE002269) are:

- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1170 Reefs

The conservation objectives for Carnsore Point cSAC are outlined below (NPWS, 2011b).

**Objective:** To maintain the favourable conservation condition of **Mudflats and sandflats not covered by Seawater at low tide** in Carnsore Point cSAC, which is defined by the following list of attributes and targets:

- Habitat area (ha): The permanent habitat area is stable or increasing, subject to natural processes (estimated as 744ha).
- Community distribution (ha): The following community complex should be conserved in a natural condition: Intertidal sand dominated by polychaetes and crustacean community complex.

**Objective:** To maintain the favourable conservation condition of **reefs** Carnsore Point cSAC, which is defined by the following list of attributes and targets:

- Habitat distribution: The distribution of reefs is stable or increasing, subject to natural processes.
- Habitat area (ha): The permanent habitat area is stable, subject to natural processes (estimated as 1847ha).

- Community extent (ha): The extent of *Laminaria* dominated community complex should be conserved, subject to natural processes.
- Community structure- The following reef community complexes should be maintained in a natural Condition: Sheltered to moderately exposed intertidal reef community complex; and Exposed subtidal reef dominated by a faunal community complex.
- Community structure: The biology of *Laminaria* dominated community complex should be conserved, subject to natural processes.

#### 4.2.2.4. Slaney River Valley cSAC; Site Code: IE000781

The relevant QIs for Slaney River Valley cSAC (IE000781) are:

- 1095 Sea Lamprey *Petromyzon marinus*
- 1103 Twaite Shad *Alosa fallax*
- 1106 Atlantic Salmon *Salmo salar* (only in fresh water)
- 1130 Estuaries
- 1140 Mudflats and sandflats not covered by seawater at low tide
- 1355 Otter *Lutra lutra*
- 1365 Harbour Seal *Phoca vitulina*

The conservation objectives for Slaney River Valley cSAC are outlined below (NPWS, 2011c):

### 1095 Sea Lamprey *Petromyzon marinus*

To restore the favourable conservation condition of Sea lamprey in the Slaney River Valley SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	Artificial barriers can block or cause difficulties to lampreys' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. In this site, some barrier modification is required (e.g. Clohamon weir) to permit sea lamprey passage (Gargan et al., in press)
Population structure of juveniles	Number of age/size groups	At least three age/size groups present	Attribute and target based on Harvey and Cowx (2003)
Juvenile density in fine sediment	Juveniles/m <sup>2</sup>	Juvenile density at least 1/m <sup>2</sup>	Juveniles burrow in areas of fine sediment in still water. Attribute and target based on data from Harvey and Cowx (2003)
Extent and distribution of spawning habitat	m <sup>2</sup> and occurrence	No decline in extent and distribution of spawning beds. Improved dispersal of spawning beds into areas upstream of barriers	Attribute and target based on spawning bed mapping by Inland Fisheries Ireland (IFI). Lampreys spawn in clean gravels
Availability of juvenile habitat	Number of positive sites in 3rd order channels (and greater), downstream of spawning areas	More than 50% of sample sites positive	Target based on studies by Central Fisheries Board (CFB)/IFI; Ecofact for NPWS (e.g. King and Linnane, 2004; O'Connor, 2007)

### 1103 Twaite Shad *Alosa fallax*

To restore the favourable conservation condition of Twaite shad in the Slaney River Valley SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: extent of anadromy	% of river accessible	Greater than 75% of main stem length of rivers accessible from estuary	In some catchments, artificial barriers block twaite shads' upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas. Barrier modification required to facilitate passage of adult fish within channels (Gargan et al., in press)
Population structure- age classes	Number of age classes	More than one age class present	Regular breeding has not been confirmed in the River Slaney in recent years (King and Roche, 2008)
Extent and distribution of spawning habitat	m <sup>2</sup> and occurrence	No decline in extent and distribution of spawning habitats	
Water quality- oxygen levels	Milligrammes per litre	No lower than 5mg/l	Attribute and target based on Maas, Stevens and Briene (2008)
Spawning habitat quality: Filamentous algae; macrophytes; sediment	Occurrence	Maintain stable gravel substrate with very little fine material, free of filamentous algal (macroalgae) growth and macrophyte (rooted higher plants) growth	

**1106 Atlantic Salmon *Salmo salar* (only in fresh water)**

To restore the favourable conservation condition of Salmon in the Slaney River Valley SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution: extent of anadromy	% of river accessible	100% of river channels down to second order accessible from estuary	Artificial barriers can block salmon's upstream migration, thereby limiting species to lower stretches and restricting access to spawning areas
Adult spawning fish	Number	Conservation Limit (CL) for each system consistently exceeded	A conservation limit is defined by the North Atlantic Salmon Conservation Organisation (NASCO) as "the spawning stock level that produces long-term average maximum sustainable yield as derived from the adult to adult stock and recruitment relationship". The target is based on the Standing Scientific Committee of the National Salmon Commission's annual model output of CL attainment levels. See SSC (2010). Stock estimates are either derived from direct counts of adults (rod catch, fish counter) or indirectly by fry abundance counts. The fish counter at Clohamon is used to assess the run of salmon on the Slaney. The Slaney is currently (2011) below its CL for both 1SW salmon (meeting 54%) & MSW salmon (meeting 34%)
Salmon fry abundance	Number of fry/5 minutes electrofishing	Maintain or exceed 0+ fry mean catchment-wide abundance threshold value. Currently set at 17 salmon fry/5 min sampling	Target is threshold value for rivers currently exceeding their conservation limit (CL)
Out-migrating smolt abundance	Number	No significant decline	Smolt abundance can be negatively affected by a number of impacts such as estuarine pollution, hydroelectric schemes, predation and sea lice ( <i>Lepeophtheirus salmonis</i> )
Number and distribution of redds	Number and occurrence	No decline in number and distribution of spawning redds due to anthropogenic causes	Salmon spawn in clean gravels
Water quality	EPA Q value	At least Q4 at all sites sampled by EPA	Q values based on triennial water quality surveys carried out by the Environmental Protection Agency (EPA)

### 1130 Estuaries

To maintain the favourable conservation condition of Estuaries in the Slaney River Valley SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated as 1,905ha using OSI data and the defined Transitional Water Body area under the Water Framework Directive. See marine supporting document for further information
Community distribution	Hectares	The following community types should be maintained in, or restored to, a natural condition: Mixed sediment community complex; Estuarine muds dominated by polychaetes and crustaceans community complex; and Sand dominated by polychaetes community complex. See map 5	The likely area of sediment communities was derived from a combination of intertidal and subtidal surveys undertaken in 2008 and 2010 (ASU, 2009; Aquafact, 2010). See marine supporting document for further information

### 1140 Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the Slaney River Valley SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 4	Habitat area was estimated as 1,027ha using OSI data. See marine supporting document for further information
Community distribution	Hectares	The following community types should be maintained in a natural condition: Estuarine muds dominated by polychaetes and crustaceans community complex; and Sand dominated by polychaetes community complex. See map 5	The likely area of sediment communities was derived from a intertidal surveys undertaken in 2008 (ASU, 2009). See marine supporting document for further information



### 1355 Otter *Lutra lutra*

To restore the favourable conservation condition of Otter in the Slaney River Valley SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Distribution	Percentage positive survey sites	No significant decline	Measure based on standard otter survey technique. FCS target, based on 1980/81 survey findings, is 88% in SACs. Current range in south-east estimated at 73% (Bailey and Rochford 2006)
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 64.7ha above high water mark (HWM); 453.4ha along river banks/ around ponds	No field survey. Areas mapped to include 10m terrestrial buffer along shoreline (above HWM and along river banks) identified as critical for otters (NPWS, 2007)
Extent of marine habitat	Hectares	No significant decline. Area mapped and calculated as 534.7ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (HWM) (NPWS, 2007; Kruuk, 2006)
Extent of freshwater (river) habitat	Kilometres	No significant decline. Length mapped and calculated as 264.1km	No field survey. River length calculated on the basis that otters will utilise freshwater habitats from estuary to headwaters (Chapman and Chapman, 1982)
Extent of freshwater (lake/lagoon) habitat	Hectares	No significant decline. Area mapped and calculated as 0.4ha	No field survey. Area mapped based on evidence that otters tend to forage within 80m of the shoreline (NPWS, 2007)
Couching sites and holts	Number	No significant decline	Otters need lying up areas throughout their territory where they are secure from disturbance (Kruuk, 2006; Kruuk and Moorhouse, 1991)
Fish biomass available	Kilograms	No significant decline	Broad diet that varies locally and seasonally, but dominated by fish, in particular salmonids, eels and sticklebacks in freshwater (Bailey and Rochford 2006) and wrasse and rockling in coastal waters (Kingston et al., 1999)
Barriers to connectivity	Number	No significant increase	Otters will regularly commute across stretches of open water up to 500m e.g. between the mainland and an island; between two islands; across an estuary (De Jongh & O'Neill, 2010). It is important that such commuting routes are not obstructed

**1365 Harbour Seal *Phoca vitulina***

**To maintain the favourable conservation condition of Harbour Seal in the Slaney River Valley SAC, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use. See map 7	See marine supporting document for further details
Breeding behaviour	Breeding sites	The breeding sites should be maintained in a natural condition. See map 7	Attribute and target based on background knowledge of Irish breeding populations and review of data from unpublished National Parks & Wildlife Service records. See marine supporting document for further details
Moulting behaviour	Moult haul-out sites	The moult haul-out sites should be maintained in a natural condition. See map 7	Attribute and target based on background knowledge of Irish populations, review of data from Lockley (1966), Cronin et al. (2004) and unpublished National Parks & Wildlife Service records. See marine supporting document for further details
Resting behaviour	Resting haul-out sites	The resting haul-out sites should be maintained in a natural condition. See map 7	Attribute and target based on background knowledge of Irish populations and unpublished National Parks & Wildlife Service records. See marine supporting document for further details
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the harbour seal population at the site. See map 7	See marine supporting document for further details

**4.2.2.5. Raven Point Nature Reserve cSAC; Site Code: IE000710**

The relevant QIs for Raven Point Nature Reserve cSAC (IE000710) are:

- 1140 Mudflats and sandflats not covered by seawater at low tide

The conservation objectives for Raven Point Nature Reserve cSAC are outlined below (NPWS, 2011d):

### 1140 Mudflats and sandflats not covered by seawater at low tide

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Raven Point Nature Reserve SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated using OSi data as 73ha
Community distribution	Hectares	The following community types should be maintained in a natural condition: Sand dominated by polychaetes community complex; Estuarine muds dominated by polychaetes and crustaceans community complex. See map 4	The likely area of sediment communities was derived from an intertidal survey undertaken in 2008 (ASU, 2009). See marine supporting document for further details

#### 4.2.2.6. Saltee Island cSAC; Site Code: IE000707

The only relevant QI for Saltee Island cSAC (IE000707) is:

- 1364 Grey Seal *Halichoerus grypus*

The conservation objectives for grey seal as a QI of Saltee Island cSAC are outlined below (NPWS, 2011e):

### 1364 Grey Seal *Halichoerus grypus*

To maintain the favourable conservation condition of Grey Seal in the Saltee Islands SAC, which is defined by the following list of attributes and targets

Attribute	Measure	Target	Notes
Access to suitable habitat	Number of artificial barriers	Species range within the site should not be restricted by artificial barriers to site use. See map 7	See marine supporting document for further details
Breeding behaviour	Breeding sites	The breeding sites should be maintained in a natural condition. See map 7 for known sites	Attribute and target based on background knowledge of Irish breeding populations; review of data from Kiely et al. (2000); Lidgard et al. (2001); Lyons (2004); a comprehensive breeding survey in 2005 (Ó Cadhla et al., 2007); and unpublished National Parks & Wildlife Service records. See marine supporting document for further details
Moulting behaviour	Moult haul-out sites	The moult haul-out sites should be maintained in a natural condition. See map 7 for known sites	Attribute and target based on background knowledge of Irish populations; research by Kiely et al. (2000); a national moult survey (Ó Cadhla and Strong, 2007); and unpublished National Parks & Wildlife Service records. See marine supporting document for further details
Resting behaviour	Resting haul-out sites	The resting haul-out sites should be maintained in a natural condition. See map 7 for known sites	Attribute and target based on review of data from Kiely (1998); Kiely et al. (2000); Lyons (2004); Cronin et al. (2004); Ó Cadhla et al. (2007); Ó Cadhla and Strong (2007); and unpublished National Parks & Wildlife Service records. See marine supporting document for further details
Population composition	Number of cohorts	The grey seal population occurring within this site should contain adult, juvenile and pup cohorts annually	Attribute and target based on review of data from Kiely (1998), Kiely et al. (2000), Lyons (2004), Ó Cadhla et al. (2007), Ó Cadhla and Strong (2007); and unpublished National Parks & Wildlife Service records. See marine supporting document for further details
Disturbance	Level of impact	Human activities should occur at levels that do not adversely affect the grey seal population	See marine supporting document for further details

#### 4.2.2.7. The Raven SPA; Site Code: IE004019

The relevant SCIs for The Raven SPA (IE004019) are:

- A001 Red-throated Diver *Gavia stellata* (wintering)
- A017 Cormorant *Phalacrocorax carbo* (wintering)
- A065 Common Scoter *Melanitta nigra* (wintering)
- A141 Grey Plover *Pluvialis squatarola* (wintering)
- A144 Sanderling *Calidris alba* (wintering)
- A999 Wetlands

The conservation objectives for The Raven SPA are outlined below (NPWS, 2012a):

**A001 Red-throated Diver *Gavia stellata***

To maintain the favourable conservation condition of Red-throated Diver in The Raven SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

**A017 Cormorant *Phalacrocorax carbo***

To maintain the favourable conservation condition of Cormorant in The Raven SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

**A065 Common Scoter *Melanitta nigra***

To maintain the favourable conservation condition of Common Scoter in The Raven SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A141 Grey Plover *Pluvialis squatarola*

To maintain the favourable conservation condition of Grey Plover in The Raven SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A144 Sanderling *Calidris alba*

To maintain the favourable conservation condition of Sanderling in The Raven SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A999 Wetlands

To maintain the favourable conservation condition of the wetland habitat in The Raven SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

Attribute	Measure	Target	Notes
Wetland habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 4,207ha, other than that due to natural patterns of variation	The wetland habitat area was estimated as 4,207ha using OSI data and relevant orthophotographs. For further information see parts three and five of the conservation objectives supporting document

#### 4.2.2.8. Wexford Harbour and Slobs SPA; Site Code: IE004076

The relevant SCIs for Wexford Harbour and Slobs SPA (IE004076) are: SOME NEED

- A004 Little Grebe *Tachybaptus ruficollis* (wintering)
- A005 Great Crested Grebe *Podiceps cristatus* (wintering)
- A017 Cormorant *Phalacrocorax carbo* (wintering)
- A054 Pintail *Anas acuta* (wintering)
- A062 Scaup *Aythya marila* (wintering)

- A067 Goldeneye *Bucephala clangula* (wintering)
- A069 Red-breasted Merganser *Mergus serrator* (wintering)
- A141 Grey Plover *Pluvialis squatarola* (wintering)
- A143 Knot *Calidris canutus* (wintering)
- A144 Sanderling *Calidris alba* (wintering)
- A149 Dunlin *Calidris alpina* (wintering)
- A157 Bar-tailed Godwit *Limosa lapponica* (wintering)
- A160 Curlew *Numenius arquata* (wintering)
- A162 Redshank *Tringa totanus* (wintering)
- A179 Black-headed Gull *Chroicocephalus ridibundus* (wintering)
- A183 Lesser Black-backed Gull *Larus fuscus* (wintering)
- A195 Little Tern *Sterna albifrons* (breeding)
- A999 Wetlands

The conservation objectives for Wexford Harbour and Slobs SPA are outlined below (NPWS, 2012b):

**A004 Little Grebe *Tachybaptus ruficollis***

**To maintain the favourable conservation condition of Little Grebe in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:**

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A005 Great Crested Grebe *Podiceps cristatus*

To maintain the favourable conservation condition of Great Crested Grebe in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A017 Cormorant *Phalacrocorax carbo*

To maintain the favourable conservation condition of Cormorant in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A054 Pintail *Anas acuta*

To maintain the favourable conservation condition of Pintail in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document



### A062 Scaup *Aythya marila*

To maintain the favourable conservation condition of Scaup in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

### A067 Goldeneye *Bucephala clangula*

To maintain the favourable conservation condition of Goldeneye in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

### A069 Red-breasted Merganser *Mergus serrator*

To maintain the favourable conservation condition of Red-breasted Merganser in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A141 Grey Plover *Pluvialis squatarola*

To maintain the favourable conservation condition of Grey Plover in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A143 Knot *Calidris canutus*

To maintain the favourable conservation condition of Knot in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A144 Sanderling *Calidris alba*

To maintain the favourable conservation condition of Sanderling in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A149 Dunlin *Calidris alpina*

To maintain the favourable conservation condition of Dunlin in Wexford Harbour and Slob SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A157 Bar-tailed Godwit *Limosa lapponica*

To maintain the favourable conservation condition of Bar-tailed Godwit in Wexford Harbour and Slob SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

#### A160 Curlew *Numenius arquata*

To maintain the favourable conservation condition of Curlew in Wexford Harbour and Slob SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

### A162 Redshank *Tringa totanus*

To maintain the favourable conservation condition of Redshank in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

### A179 Black-headed Gull *Chroicocephalus ridibundus*

To maintain the favourable conservation condition of Black-headed Gull in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

### A183 Lesser Black-backed Gull *Larus fuscus*

To maintain the favourable conservation condition of Lesser Black-backed Gull in Wexford Harbour and Slobs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Number and range of areas used by waterbirds	There should be no significant decrease in the numbers or range of areas used by waterbird species, other than that occurring from natural patterns of variation	Waterbird distribution from the 2009/2010 waterbird survey programme is discussed in part five of the conservation objectives supporting document

### A195 Little Tern *Sterna albifrons*

To maintain the favourable conservation condition of Little Tern at Wexford Harbour and Slobbs SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). Mitchell et al. (2004) provides summary population information for Wexford. The Seabird Monitoring Programme (SMP) also provides background data (JNCC, 2012)
Productivity rate: fledged young per breeding pair	Mean number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995)
Distribution: breeding colonies	Number; location; area (Hectares)	No significant decline	Little tern nest in well-camouflaged shallow scapes on sand and shingle beaches, spits or inshore islets (Mitchell et al., 2004). Due to the dynamic nature of Wexford Harbour, colony locations can vary from year to year
Prey biomass available	Kilogrammes	No significant decline	Key prey items: Mainly small, often juvenile, fish; invertebrates, especially crustaceans and insects. Key habitats: Very shallow water, advancing or receding tidelines, brackish lagoons and saltmarsh creeks, sand-banks close to the coast. Foraging range: Max 11 km, mean max 6.94 km, mean 4.14 km (BirdLife International Seabird Database (Birdlife International, 2012))
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	Seabird species can make extensive use of the marine waters adjacent to their breeding colonies. Foraging range: Max 11 km, mean max 6.94 km, mean 4.14 km (BirdLife International Seabird Database (Birdlife International, 2012))
Disturbance at the breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding little tern population	Little tern nest in well-camouflaged shallow scapes on sand and shingle beaches, spits or inshore islets (Mitchell et al., 2004). Due to the dynamic nature of Wexford Harbour, colony locations can vary from year to year

## A999 Wetlands

To maintain the favourable conservation condition of the wetland habitat in Wexford Harbour and Slob SPA as a resource for the regularly-occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

Attribute	Measure	Target	Notes
Wetland habitat area	Hectares	The permanent area occupied by the wetland habitat (see map 3) should be stable and not significantly less than the area of 4,241ha, other than that due to natural patterns of variation	The wetland habitat area was estimated as 4,241ha using OSI data and relevant orthophotographs. For further information see parts three and five of the conservation objectives supporting document

### 4.2.2.9. Lady's Island Lake SPA; Site Code: IE004009

The relevant SCIs for Lady's Island Lake SPA (IE004009) are:

- A179 Black-headed Gull *Chroicocephalus ridibundus*
- A191 Sandwich Tern *Sterna sandvicensis*
- A192 Roseate Tern *Sterna dougallii*
- A193 Common Tern *Sterna hirundo*
- A194 Arctic Tern *Sterna paradisaea*

The conservation objectives of Lady's Island Lake SPA is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (NPWS, 2011f).

### 4.2.2.10. Tacumshin Lake SPA; Site Code: IE004092

The relevant SCIs for Tacumshin Lake SPA (IE004092) are:

- A141 Grey Plover *Pluvialis squatarola*

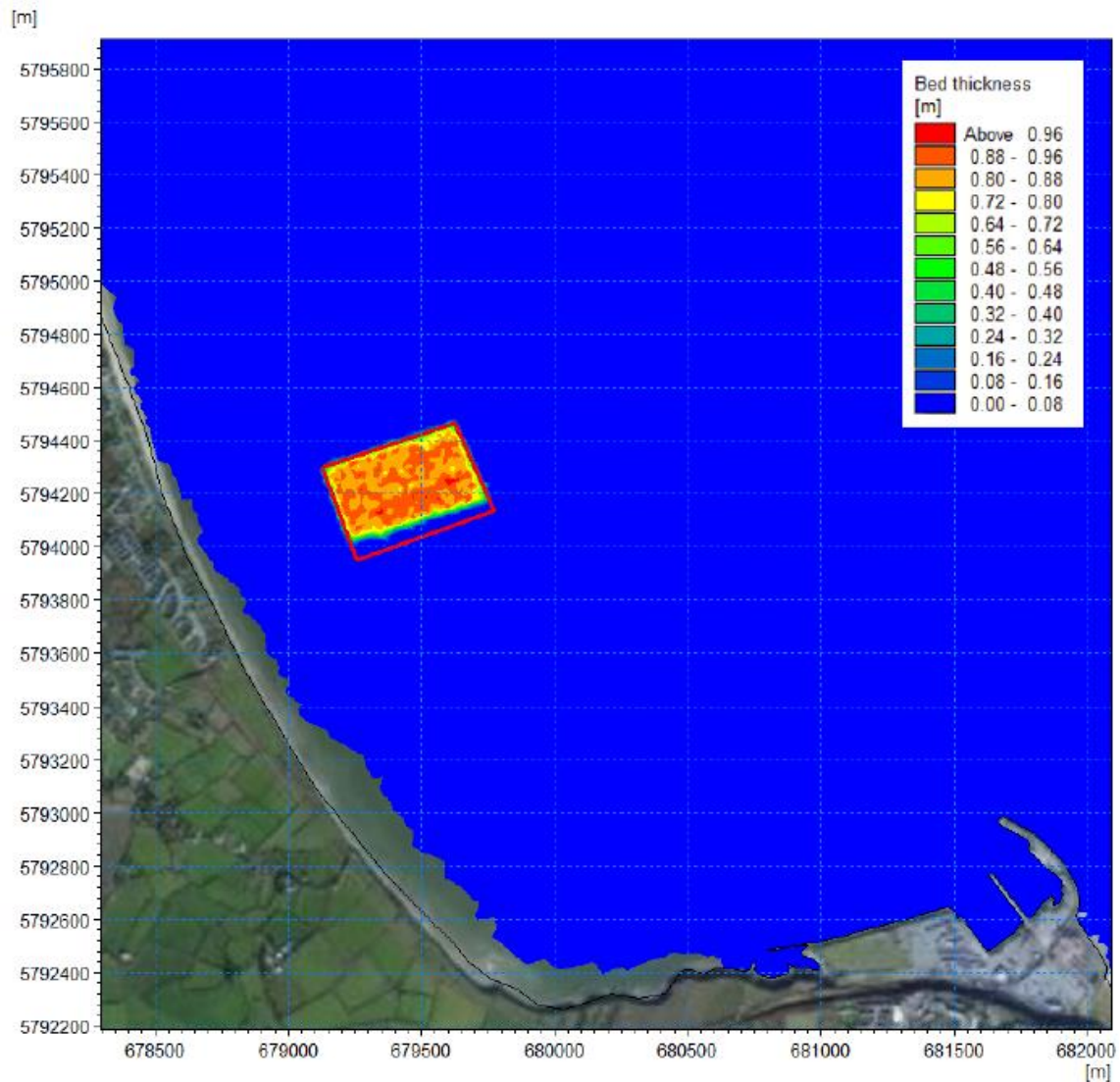
The conservation objectives of Tacumshin Lake SPA is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA (NPWS, 2011g).

## 4.3. Assessment of Likely Effects

### 4.3.1. Likely Effects of Proposed Activity

A sediment transport model to determine the fate of the dredged material upon initial disposal to the beach nourishment site and over the longer term was developed by RPS (RPS, 2014). The sediment that was modelled was dominated by medium sand. Figure 4.11 shows the deposition thickness following the dredging and dumping activity which was modelled over a spring neap tidal cycle (which reflects the duration of the

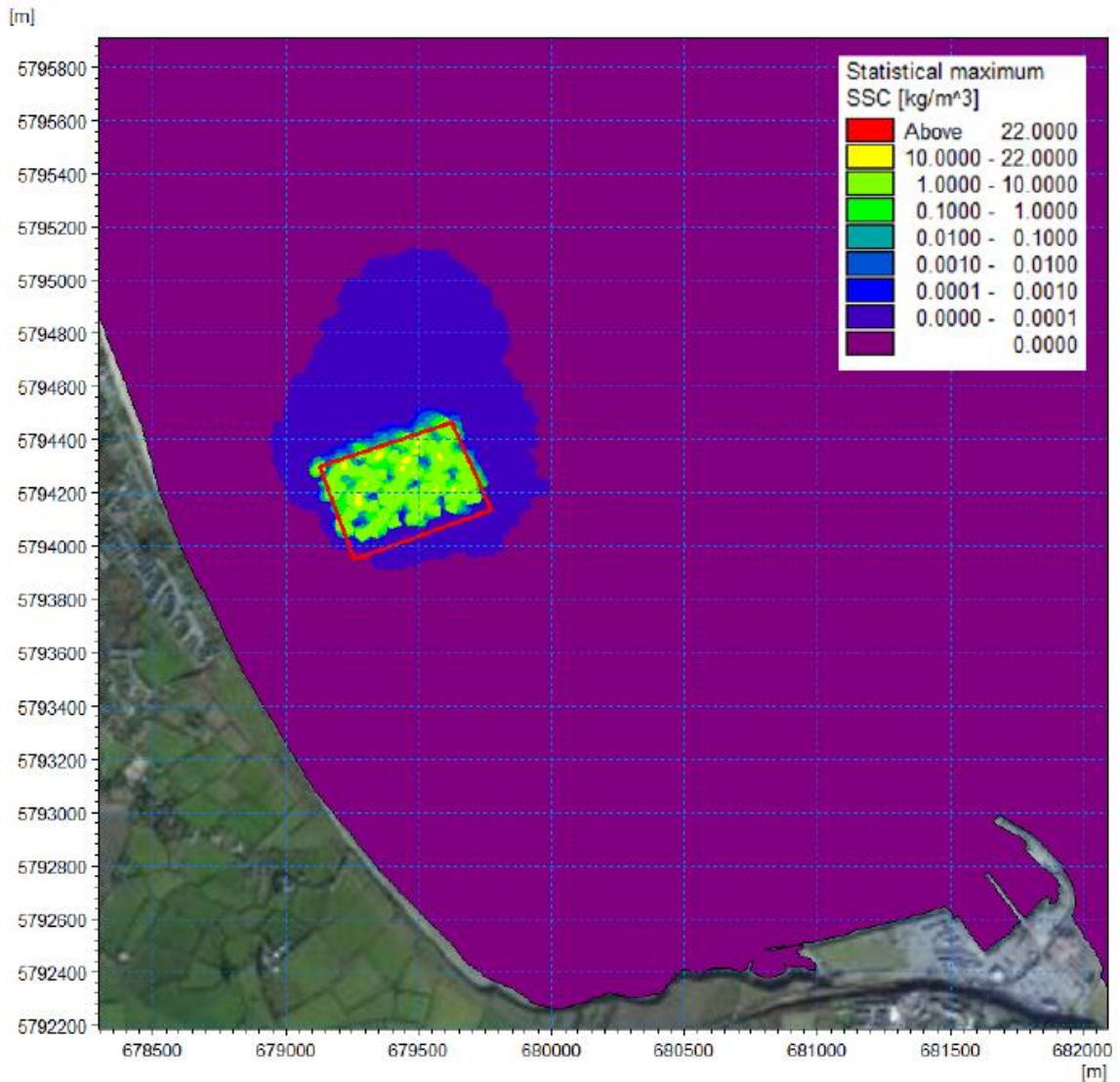
operation) with the placement of the dredged material confined to periods when water depths are sufficient to allow access draft for the dredging vessel. It can be seen that almost all of the material remains within the site boundary and the resultant thickness is in line with an even distribution of the material across the site.



**Figure 4.11: Deposition thickness following the dredging and disposal activities.**

Figure 4.12 shows the maximum suspended sediment plume over the course of the operation. This is the maximum suspended sediment concentration which was experienced in each mesh element over the course of the simulation. These values may therefore not have occurred simultaneously nor have persisted for any significant period. The values seen within the site are relatively high (up to  $22\text{kg/m}^3$ ) however the values outside the nourishment site are low and extend for a maximum distance of c. 50m north of the nourishment site. The sandy nature of the material coupled with the spill being initiated when waters depths are sufficient to allow dredger access means that there is little or no impact on water quality beyond the immediate vicinity

of the re-nourishment site. The sediment plume does not encroach upon any cSAC or SPA that was identified in Section 4.2 above.



**Figure 4.12: Maximum suspended solids concentration over a spring neap tidal cycle.**

Figures 4.13 to 4.16 show the modelled fate of the nourishment site material following relatively frequent storm conditions (Force 6, 12m/s) from the northeast, east, southeast and north east (including offshore swell conditions) respectively. All scenarios show that movement is towards the coastline in the immediate vicinity of the nourishment site and will not encroach on any Natura 2000 site.



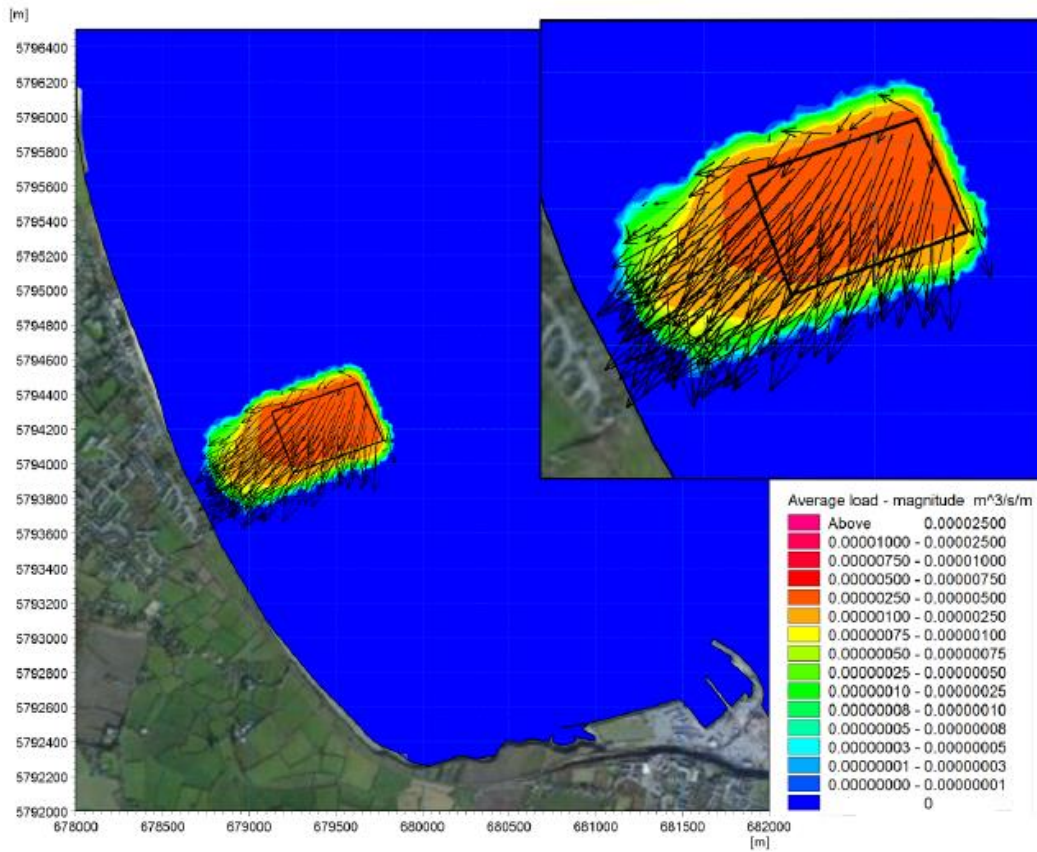


Figure 4.13: Net movement of nourishment material due to F6 storm from North East.

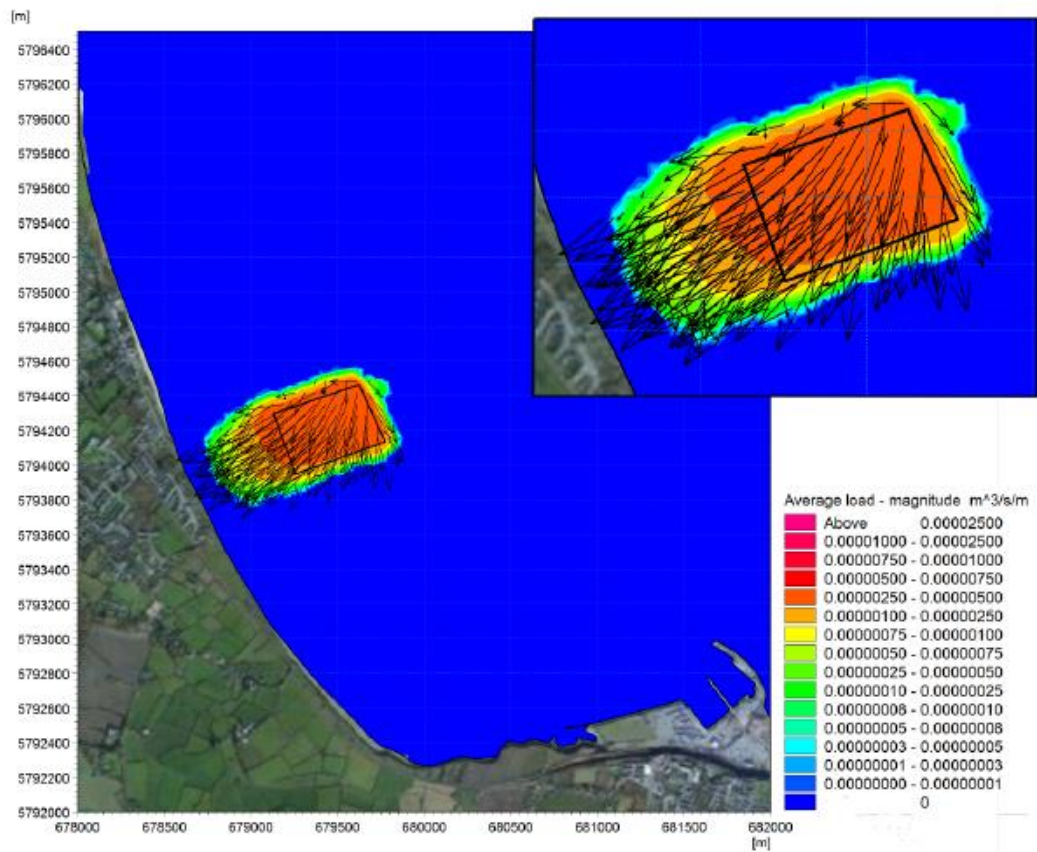


Figure 4.14: Net movement of nourishment material due to F6 storm from East.

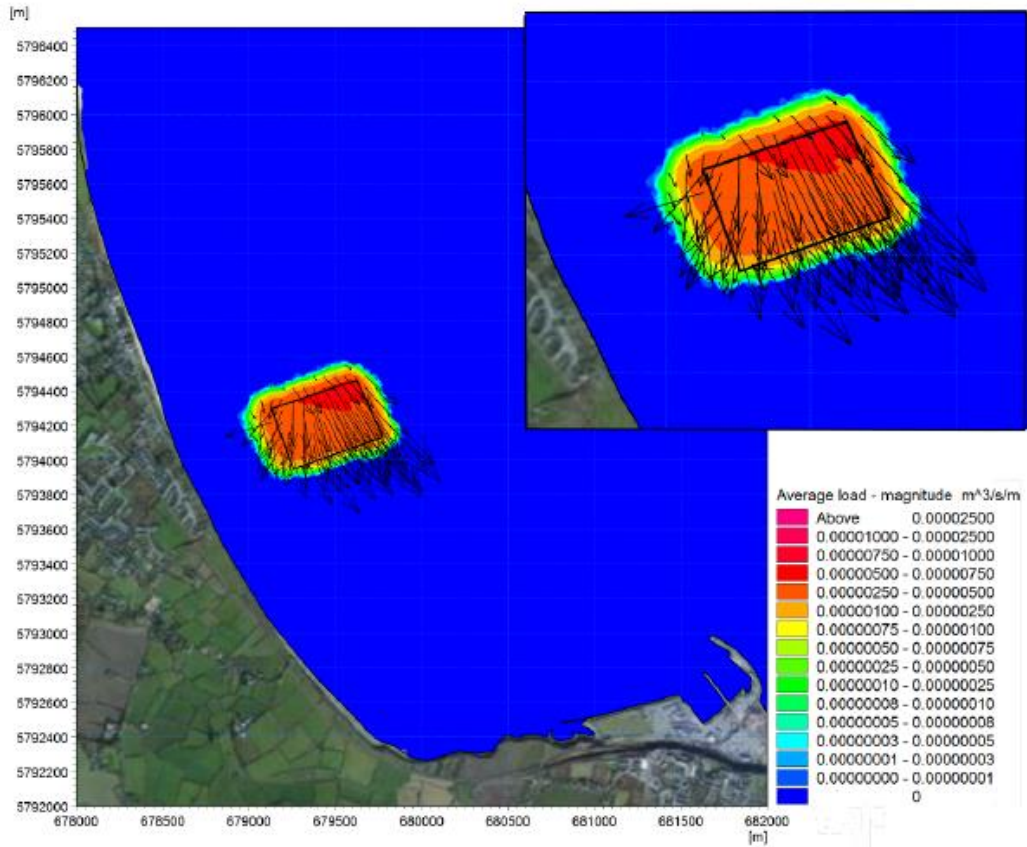


Figure 4.15: Net movement of nourishment material due to F6 storm from South East.

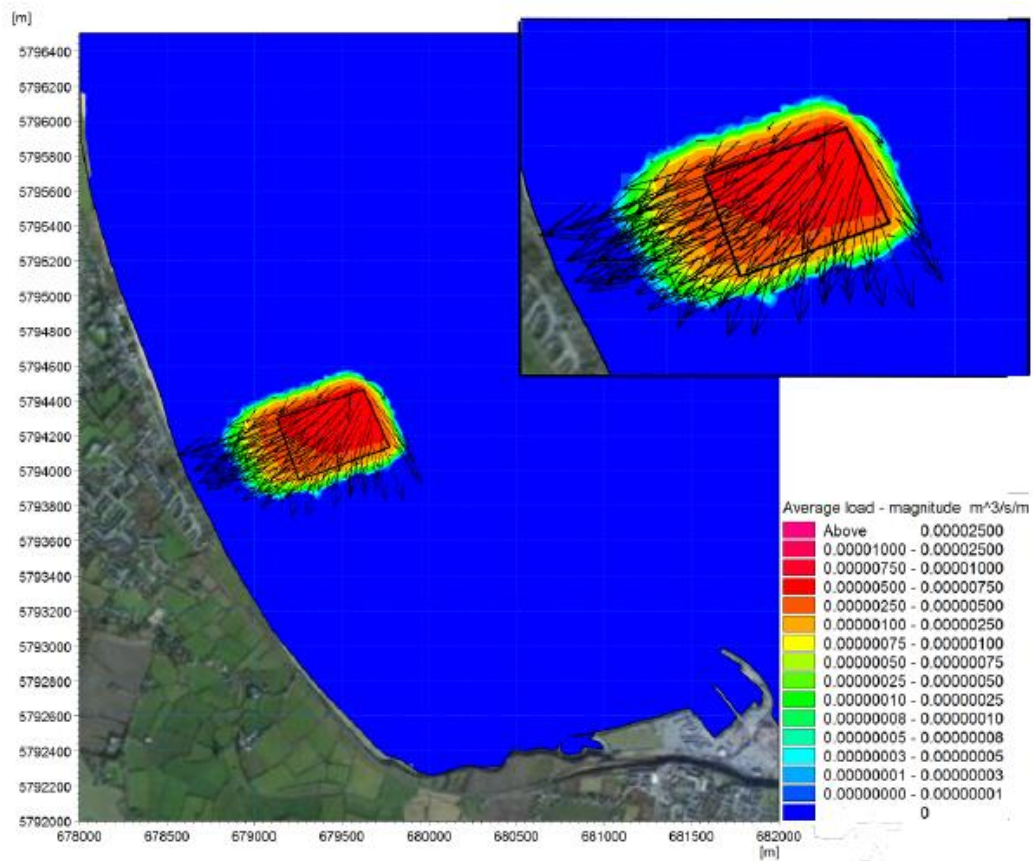


Figure 4.16: Net movement of nourishment material due to F6 storm from South East & Offshore Swell.

### 4.3.2. Screening Assessment

#### 4.3.2.1. Sediment Suspension at Nourishment Site

Due to the fact that no sediment from the dredging or beach nourishment will encroach on a Natura 2000 site, the fixed qualifying interests (*i.e.* habitats) within the Natura 2000 sites will not in any way be affected by the proposed activity. As a result the integrity of the following qualifying interests (and their conservation objectives) will not be impacted by the proposed activity:

- Long Bank cSAC (IE002161) – *Sandbanks which are slightly covered by seawater at all time* – as no sediment will enter the cSAC the habitat area of the sandbank will remain stable, the habitat distribution will remain stable and the community type will be conserved in its natural condition *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Blackwater Bank cSAC (IE002953) – *Sandbanks which are slightly covered by seawater at all time* – as no sediment will enter the cSAC the habitat area of the sandbank will remain stable, the habitat distribution will remain stable and the community type will be conserved in its natural condition *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Carnsore Point cSAC (IE002269) – *Mudflats and sandflats not covered by seawater at low tide* – as no sediment will enter the cSAC the habitat area of the mudflats and sandflats will remain stable and the community type will be conserved in its natural condition *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Carnsore Point cSAC (IE002269) – *Reefs* – as no sediment will enter the cSAC the habitat distribution and area of the mudflats and sandflats will remain stable and the community extent and structure will be conserved in their natural condition *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Slaney River Valley cSAC (IE000781) – *Estuaries and Mudflats and sandflats not covered by seawater at low tide* - as no sediment will enter the cSAC the habitat area of the estuary and mudflats and sandflats will remain stable and the community types associated with each will be conserved in their natural condition *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Raven Point Nature Reserve cSAC (IE000710) – *Mudflats and sandflats not covered by seawater at low tide* - as no sediment will enter the cSAC the habitat area of the mudflats and sandflats will remain stable and the community types associated with them will be conserved in their natural condition *i.e.* the favourable conservation condition of the cSAC will be maintained.
- The Raven SPA (IE004019) – *Wetlands* - as no sediment will enter the SPA the wetland habitat area will remain stable as a resource for the regularly occurring migratory waterbirds that use it *i.e.* the favourable conservation condition of the SPA will be maintained.

- The Wexford Harbour and Slobbs SPA (IE004076) – *Wetlands* - as no sediment will enter the SPA the wetland habitat area will remain stable as a resource for the regularly occurring migratory waterbirds that use it *i.e.* the favourable conservation condition of the SPA will be maintained.

The elevated suspended solid levels in the water column within the nourishment site and c. 50m around, while localised, short-term and temporary, may impact upon mobile species for which the Natura 2000 sites are designated, if the species are migrating through or foraging in the area prior to settlement of the plume.

- Slaney River Valley cSAC (IE000781) – *Sea lamprey* – Adult sea lamprey migrate back to freshwater rivers in April and May and juveniles metamorphose into adults and migrate out to sea between July and September (Maitland, 2003). The dredging operation is planned for October and the elevated suspended solid levels will be short-term and temporary therefore sea lamprey distribution, juvenile population structure, juvenile density in fine sediment and the availability of juvenile habitat will not be impacted and the extent and distribution of spawning habitat will remain stable. The favourable conservation condition of the cSAC will be maintained.
- Slaney River Valley cSAC (IE000781) – *Twaite shad* – Twaite shad in the marine environment occupy waters ranging in depth from 10 to 110m (Maitland & Hatton-Ellis, 2003) with a preference for water 10–20m deep (Taverny, 1991). Adult twaite shad migrate stop feeding and gather in estuaries of suitable rivers in early summer (April and May), moving upstream to spawn from mid-May to mid-July (Maitland & Hatton-Ellis, 2003). As the nourishment site is in waters ranging in depth from 3-4m and the fact that the dredging operation is planned for October and the elevated suspended solid levels will be short-term and temporary, twaite shad distribution, population structure, spawning habitat quality, extent and distribution will not be impacted *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Slaney River Valley cSAC (IE000781) – *Salmon* – Salmon enter freshwater systems between April and July and the smolts travel back down in late April/May. The fact that the dredging operation is planned for October and the elevated suspended solid levels will be short-term and temporary mean that salmon distribution, spawning, fry abundance, smolt abundance, number and distribution of redds and water quality will not be impacted *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Slaney River Valley cSAC (IE000781) – *Otter* – Otters tend to forage within 80m of the shoreline (high water mark) (NPWS, 2007; Kruuk, 2006). If any otters travel down from the cSAC towards Rosslare they will not forage out as far as the nourishment site as it is c. 500m from the high water mark therefore otter distribution and extent will not be impacted. There will also be no decline in

couching/holt sites or fish biomass as a result of the proposed activity, *i.e.* the favourable conservation condition of the cSAC will be maintained.

- Slaney River Valley cSAC (IE000781) – *Harbour seal* – Harbour seals may forage in the area of the beach nourishment site. If they are not disturbed by the presence of the hopper dredger or barge and enter the nourishment site they will experience elevated suspended solid levels in the water column. If these levels are not favourable to them they will leave the area. As the plume will be short term and temporary no lasting impact is expected on harbour seals both individually and at a population level as harbour seals are adapted to estuarine environments which naturally have elevated suspended solid levels following storms or heavy rainfall. The proposed activity will not impact upon access to suitable habitat, breeding behaviour, moulting behaviour and resting behaviour and the disturbance caused will not adversely affect the harbour seal at a population level *i.e.* the favourable conservation condition of the cSAC will be maintained.
- Saltee Island cSAC (IE000707) – *Grey seal* – Grey seals can forage distances of 100's of km and individuals from the grey seal population on the Saltee Islands may forage as far as the beach nourishment site. In addition, there is a known breeding site in Wexford harbour and individuals from here may also forage in the nourishment site. If these individuals are not disturbed by the presence of the hopper dredger or barge and enter the nourishment site they will experience elevated suspended solid levels in the water column. If these levels are not favourable to them they will leave the area. As the plume will be short term and temporary no lasting impact is expected on grey seals both individually and at a population level. The proposed activity will not impact upon access to suitable habitat, breeding behaviour, moulting behaviour, resting behaviour, population composition and the disturbance caused will not adversely affect the harbour seal at a population level *i.e.* the favourable conservation condition of the cSAC will be maintained.
- The Raven SPA (IE004019) – *Red-throated diver, Cormorant and Common Scoter* – These species all have the potential to forage in the nourishment area. As they are diving species, it is possible that during the disposal activity, they will not be able to forage at the site due to the presence of the dredger and/or the level of suspended sediments in the water column. However, as the disturbance will be short term and temporary their population trend and distribution will not be altered by the proposed activity *i.e.* the favourable conservation condition of the SPA will be maintained.
- Wexford Harbour & Slobs SPA (IE004076) – *Little Grebe, Great crested grebe, Cormorant, Pintail, Scaup, Goldeneye, Red-breasted merganser, Black-headed gull* - These species all have the potential to forage in the nourishment area. As they are diving species, it is possible that during the disposal activity, they will not be able to forage at the site due to the presence of the dredger and/or the level of suspended sediments in the water column. However, as the disturbance will be short term and

temporary their their population trend and distribution will not be altered by the proposed activity *i.e.* the favourable conservation condition of the SPA will be maintained.

- Wexford Harbour & Slobs SPA (IE004076) –*Black-headed gull* - This species is a non-diving opportunistic feeder and increases in sediment suspension in the nourishment site would not impact this species in any way. Its population trend and distribution will not be altered by the proposed activity *i.e.* the favourable conservation condition of the SPA will be maintained.
- Wexford Harbour & Slobs SPA (IE004076) –*Lesser black-backed gull, Little tern* - These species all have the potential to forage in the nourishment, however they are all summer migrants and as a result will not be present when the disposal operation is taking place. As a result the distribution and population trend of these species will not be impacted *i.e.* the favourable conservation condition of the SPA will be maintained.
- Lady’s Island Lake SPA (IE004009) –*Black-headed gull* - This species is a non-diving opportunistic feeder and increases in sediment suspension in the nourishment site would not impact this species in any way. Its population trend and distribution will not be altered by the proposed activity *i.e.* the favourable conservation condition of the SPA will be maintained.
- Lady’s Island Lake SPA (IE004009) –*Sandwich tern, Roseate tern, Common tern and Arctic tern* - These species all have the potential to forage in the nourishment, however they are all summer migrants and as a result will not be present when the disposal operation is taking place. As a result the distribution and population trend of these species will not be impacted *i.e.* the favourable conservation condition of the SPA will be maintained.

#### 4.3.2.2. Sediment Dispersion to Rosslare Strand

Over the course of a number of storm events the sediment from the nourishment site will migrate towards Rosslare Strand as intended. While the impacts of this will be localised, short-term and temporary, they may impact upon mobile species from the nearby Natura 2000 sites which forage along Rosslare Strand.

- Slaney River Valley cSAC (IE000781) – *Otter and Harbour seal*– As otters and harbour seals are adapted to estuarine environments which naturally have elevated suspended solid levels following storms or heavy rainfall, no impact is expected from the dispersal of material to Rosslare Strand. Therefore the conservation objectives of the site will be met and the favourable conservation condition of the cSAC will be maintained.
- Saltee Island cSAC (IE000707) – *Grey seal* – Grey seals are adapted to estuarine environments which naturally have elevated suspended solid levels following storms or heavy rainfall, no impact is expected

from the dispersal of material to Rosslare Strand. Therefore the conservation objectives of the site will be met and the favourable conservation condition of the cSAC will be maintained.

- The Raven SPA (IE004019) –*Common Scoter, Grey plover and Sanderling* – These species all feed intertidally and have the potential to forage along Rosslare Strand. Scoter are a diving species and it is possible that during periods of sediment re-mobilisation, they may not be able to forage at the site. Grey plover and sanderling forage along the sea shore and during periods of sediment accretion, their feeding resource may be removed. However, as the disturbance will be short term and temporary their population trend and distribution will not be altered by the proposed activity *i.e.* the favourable conservation condition of the SPA will be maintained.
- Wexford Harbour & Slobs SPA (IE004076) –*Grey plover, Knot, Sanderling, Dunlin, Bar-tailed godwit, Curlew and Redshank* – These species all feed intertidally and have the potential to forage along Rosslare Strand. These species forage along the sea shore and during periods of sediment accretion, their feeding resource may be disturbed. However, as the disturbance will be short term and temporary their population trend and distribution will not be altered their population trend and distribution will not be altered by the proposed activity *i.e.* the favourable conservation condition of the SPA will be maintained.
- Tacumshin Lake SPA (IE004092) – Grey plover – This is an intertidal species; however, the distance from the SPA to Rosslare Strand is of such that it is highly unlikely that an individual would forage on Rosslare Strand. However, if an individual did travel that far it would forage along the sea shore and during periods of sediment accretion, its feeding resource may be disturbed. However, as the disturbance will be short term and temporary their population trend and distribution will not be altered by the proposed activity *i.e.* the favourable conservation condition of the SPA will be maintained.

#### 4.3.2.3. Noise

The presence of the dredging and disposal vessel may cause a disturbance to mobile species in the area in particular to marine mammals which are listed under Annex IV of the Habitats Directive.

There will be three sound sources of relevance:

1. noise produced from the dredging activity,
2. the vessel noise; and
3. noise associated with the disposal activity.

Dredging to maintain shipping lanes emits continuous broadband sound during operations, mostly in the lower frequencies (OSPAR Commission, 2009a). Dredging operations have been reported to produce low frequency omnidirectional sound of several tens of Hz to several thousand Hz (and up to approximately 20 kHz) at sound pressure levels of 135 – 186 dB re: 1  $\mu$ Pa Richardson *et al.*, 1995; OSPAR, 2009a; 2009b cited in DAHG, 2014). In one investigation, estimated source levels ranged from 160 to 180 dB re 1  $\mu$ Pa at 1 m (maximum  $\sim$  100 Hz). Bandwidth was between 20 Hz and 1 kHz (limited by the recording equipment; most energy was below 500 Hz; Richardson *et al.* 1995). In a Defra (2003) study measured sound spectrum levels emitted by an aggregate dredger at different distances and found most energy to be below 500 Hz. Robinson *et al.*, (2011) reported on noise measurements from 5 different trailer suction hopper dredges which operate in UK waters ranging in length from 72 to 120m, in capacity from 1418 to 4832m<sup>3</sup> and in installed power from 2720 to 4920kW (2460 x 2). Operating frequencies for full dredging (draghead down, pump on) ranged from as low as 30 to 50Hz to into the high tens of kHz. Where measurements up to 100 kHz were obtained, it was clear that they correlated with sediment extraction and where measurements up to 200 kHz were observed, the evidence indicated that the levels dropped substantially above 100 kHz. The source levels ranged from c. 156 to 183 dB re 1  $\mu$ Pa at 1m.

The dredging vessel(s) are typically less than 100m in length. Typical broadband source levels for these mid-size vessels are generally in the 165 - 180 dB (re: 1 $\mu$ Pa) range (Richardson *et al.*, 1995; Kipple & Gabriel, 2003a; 2004; Heitmeyer *et al.*, 2004). There is considerable variability in the associated frequency spectra, although medium-sized ships tend to be more similar to large vessels in that the vast majority of sound energy is in the low-frequency band (below 1 kHz) (OSPAR Commission, 2009a).

Noise from the discharge of spoil will be masked by the vessel noise. The OSPAR Commission identifies engine noise as the noise associated with the dumping of wastes at sea (OSPAR Commission, 2009b). While the majority of the energy generated by vessel movements is below 1 kHz, full dredging can generate higher levels of broadband noise up to 200 kHz (although it is not as high for sand extraction as it is for gravel extraction) (Robinson *et al.*, 2011). The source level for both activities is predominantly between 160 and 180 dB (re: 1  $\mu$ Pa). During the disposal operation, the dredger slows to approximately 1 knot, the doors are opened at the bottom of the dredger and the contained sediments fall under gravity out of the dredger. During this process the engine noise would be at minimal levels and no dredging pumps would be in operation.

The functional frequencies of cetaceans and pinnipeds are detailed below:

- Baleen whales: low frequency - 7Hz to 22 kHz, species include humpback whale, fin whale and minke whale;



- Most toothed whales and dolphins: Mid-frequency – 150 Hz to 160 kHz, species include sperm whale and dolphin species;
- Certain toothed whales and porpoises: high frequency – 200 Hz to 180 kHz, species include harbour porpoise;
- Pinnipeds (in water): 75 Hz to 75 kHz, both grey and harbour seals;
- Pinnipeds (in air): 75 Hz to 30 kHz, both grey and harbour seals;

Tables 4.5 and 4.6 shows the noise exposure criteria for these cetaceans and pinnipeds (Southall *et al.*, 2007).

**Table 4.5: Criteria for Permanent injury – estimated values for PTS onset for non-pulse sources**

Cetaceans			Pinnipeds (in water)	Pinnipeds (in air)
Low frequency 7Hz – 22 kHz Baleen whales	Mid-frequency 150 Hz – 160 kHz Most toothed whales, dolphins	High frequency 200 Hz – 180 kHz Certain toothed whales, porpoises	75 Hz – 75 kHz	75 Hz – 30 kHz
230dB SPL 215dB SEL	230dB SPL 215dB SEL	230dB SPL 215dB SEL	218dB SPL 2203dB SEL	149dB SPL 144.5dB SEL

**Table 4.6: Criteria and values for disturbance/behavioural response from non-pulse sources**

Cetaceans			Pinnipeds (in water)	Pinnipeds (in air)
Low frequency 7Hz – 22 kHz Baleen whales	Mid-frequency 150 Hz – 160 kHz Most toothed whales, dolphins	High frequency 200 Hz – 180 kHz Certain toothed whales, porpoises	75 Hz – 75 kHz	75 Hz – 30 kHz
120 – 160 dB RL	90 – 200 dB RL	90 – 170 dB RL	100+ dB RL	110 – 120 dB RL

Richardson *et al.* (1995) provide an overview of investigations into behavioral responses of cetaceans to dredging. Bowhead whales (*Balaena mysticetus*) did not apparently respond to a suction dredge in one study, but individuals avoided these dredges when exposed to 122 -131 dB re 1 µPa (or 21-30 dB above ambient noise) in another investigation (see also Richardson *et al.* 1990). Gray whales (*Eschrichtius robustus*) ceased to use a particular breeding lagoon after an increase in industrial activities, including shipping and dredging

(Bryant *et al.* 1984). However, it was not clear if this was due to sound or the increased presence of ships; no studies were made of the increase in sound or of received sound pressure levels.

The noise levels associated with dredging, disposal and vessel movements will not cause permanent injury to marine mammals. The noise levels are of a level that could result in a disturbance/behavioral response by marine mammals. However, given the fact that the harbour area is used very infrequently by marine mammals especially during the winter months and in low numbers and the fact that the dredging is once off for a 15-20 day period the risk to marine mammals is considered insignificant.

During transiting to the nourishment site the dredger will have the characteristics of a small trade vessel. Again the presence of marine mammals in this area is low especially during the winter months, this and the slow speed of the vessel during the disposal operations (c. 1 knot), the short timeframe involved (c. 10 min) and the fact that the dredging pumps will be turned off, the risks of disturbance to marine mammals during the disposal operations are considered insignificant. The presence of the vessel will be heard by any mammals in the area and if disturbed they will temporarily move away into open sea surrounding them.

With regard to increases in suspended solids due to the dredging and disposal operations, the risk of impact will be negligible as the dredging and disposal activities will be short-term and temporary and the plume of suspended sediments will be localised around the dredger and disposal site. Numerous reports have been undertaken on the effects of the dumping activities. The cetaceans will avoid the area of dredging/disposal if they are disturbed by the activity and will return to the area following the dredging/disposal operation.

#### **4.3.3. Screening Statement**

The Screening Assessment has shown that there is no potential for significant effects from the proposed dredging and beach nourishment campaign and Stage 2 Appropriate Assessment is not required.

## **5. Summary**

The impacts from the proposed dredging and beach nourishment campaign will not have any significant effects on the nearby Natura 2000 sites, their qualifying interests/special conservation interests, or conservation objectives. The Screening Assessment has concluded that Stage 2 Appropriate Assessment is not required.

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# Appendix 1

## Consultation



# AQUAFACT

AQUAFACT INTERNATIONAL SERVICES LTD.

The Manager,  
Development Applications Unit,  
Department of Arts, Heritage & the Gaeltacht,  
Newtown Road.,  
Wexford

Our Ref: JN1256

13/05/2014

**RE: MAINTENANCE DREDGING AND BEACH NOURISHMENT CAMPAIGN, ROSSLARE EUROPORT**

Dear Sir/Madam,

AQUAFACT International Services Ltd. has been contracted by Iarnród Éireann to prepare a Stage 2 Appropriate Assessment (Natura Impacts Statement) for its Maintenance Dredging and Beach Nourishment Campaign at Rosslare Europort. The NIS is to form part of an application for a Foreshore Licence for the dredging of the accumulated sand in the Approach Channel and Harbour to maintain navigation.

Rosslare Europort is a major entry and exit point for passenger and freight traffic between Ireland and the UK/Continental Europe. It is located approximately 5 miles north of Wexford's south-eastern corner Carnsore Point. In January 2014 it became evident that significant sediment encroachment had occurred into the Approach Channel of Rosslare Europort during 2013/2014 winter storms. An initial survey indicated that a sand bank had extended 50m or more into the Approach Channel. As a consequence Rosslare Europort established an exclusion zone at the Breakwater and the width of the navigation channel was reduced by 100m.

Further restrictions were established on 13<sup>th</sup> February 2014 due to sand deposition in the Harbour and Approach Channel. The accumulation of sand at Berth 4 and in the Approach Channel is currently causing difficulties for vessels berthing at Berth 3 in certain wind conditions.

Hydrographic surveys of the areas of most immediate concern (the Approach Channel at the Breakwater, Berth 4 and the approaches to Berth 2 & 3), conducted from mid-February to early April 2014, indicates that approximately 80,000-100,000m<sup>3</sup> of sand has accumulated in the Harbour and Approach Channel over the course of the 2013/2014 winter storms (i.e. inside and outside the breakwater at Berth 4).

The quantum of sand migration and accumulation in Rosslare Europort over the 2013/2014 winter storms is both unprecedented and unforeseeable. Unless mitigation actions are taken, there is a risk that Berth 2 & 3 will be closed, resulting in cessation of up to 21 scheduled services per week Irish and UK/Continental Europe marine corridors.

Aquafact International Services Ltd. 12 Kilkerrin Park, Liosbaun, Tuam Road, Galway, Ireland.

**Tel:** 091 756812 / 756813 **Fax:** 091 756888 **E-Mail:** [info@aquafact.ie](mailto:info@aquafact.ie) **Web:** [www.aquafact.ie](http://www.aquafact.ie)  
**RBN:** 117379 **VAT No:** IE4754258i **Reg Office:** Coen & Co. 200, Uppr. Salthill, Galway, Ireland

The location of the Channel Limits, Beach Nourishment Site (disposal site), route from Rosslare Europort to the Beach Nourishment Site and Natura 2000 sites can be seen in the attached map in Appendix 1. The area inside and outside of Berth 4 is the area where sand has accumulated and is proposed to be dredged. The disposal site was selected based on dispersion modelling indicating that the sand will naturally migrate to the nearby beach (Rosslare Strand).

The actual duration of the dredging and controlled deposition will be dependent on the dredger proposed by the successful contractor. On previous experience and current estimates, it is likely that the maintenance campaign will be completed in 10-15 days.

In terms of activity methodology the maintenance campaign will proceed along the following sequence:

1. The sand will be dredged by hydraulic means with either (a) a cutter suction dredger & split hopper dump barge or (b) a trailer suction hopper dredger. Either option will be supplemented by mechanical or hydrodynamic dredging in the areas inaccessible to suction dredgers, i.e. along quay walls, etc.
2. The loaded dredger will proceed along the proposed navigation route to the sand deposition site.
3. The dredged material will be deposited in an even distribution throughout the designated area by release through the hull of the split hopper dump barge or the trailer suction hopper dredger.

The proposed dredging and beach nourishment campaign is identical to the one carried out in 2011.

A Stage 1 Screening Assessment was prepared by Iarnród Éireann for the proposed activity and found that impacts on the Natura 2000 sites could not be screened out and that a NIS was required. Consultation with NPWS was carried out at this stage (30<sup>th</sup> April 2014).

In light of this, AQUAFACt requests the scoping opinion of NPWS with regards to the proposed maintenance dredging/beach nourishment campaign.

If you require anything further please do not hesitate to contact me,

Kind regards,

-----  
Dr. Caroline Roche

carolir







The Manager  
Development Application Unit  
Department of Arts, Heritage and the Gaeltacht  
Newtown Road  
Wexford

30<sup>th</sup> April 2014

Our Ref.: Rosslare Europort –  
Re: Submission of Stage 1 Screening Report and Scoping for NIS

Dear Sir/Madam

Iarnród Éireann is in the process of preparing documentation and design for Maintenance Dredging at Rosslare Harbour and Approach Channel to maintain navigation for Rosslare Europort.

As part of the documentation we have screened the impact of the works in accordance with Appropriate Assessment requirements.

Iarnród Éireann herein submits a Stage 1 – Screening for Appropriate Assessment for your review. We also wish to scope the extent of the Stage 2 Natura Impact Statement.

We would be grateful if you could respond at as soon as possible with any information you may have available or issues you wish to raise, with a view to informing the Stage 2 Natura Impact Statement. T

I trust the information submitted in this correspondence is satisfactory. Please do not hesitate to contact me if you require anything further.

Yours sincerely



**Mark Conroy**

For New Works Dept., Iarnród Éireann



**An Roinn**  
**Ealaíon, Oidhreachta agus Gaeltachta**  

---

**Department of**  
**Arts, Heritage and the Gaeltacht**

18 June 2014

**Our Ref:** G Pre00190/2014  
**Your Ref:** JN1256

Caroline Roche, PhD  
Marine Ecologist  
AQUAFAC International Services Ltd.  
12 Kilkerrin Park  
Liosbaun  
Tuam Road  
Galway City  
Co. Galway

**Re: Scoping letter in relation to a maintenance dredging and beach nourishment campaign at Rosslare, Wexford.**

A Chara,

I refer to your recent correspondence. Outlined below are the recommendations of the Department of Arts, Heritage and the Gaeltacht with regard to the above.

**Marine Science and Biodiversity**

The proposed development would occur within any currently designated Natura sites. However, a number of sites are to be found adjacent to the proposed activities including:

- o Slaney River Valley SAC (Site Code: 000781)
- o Carnsore Point SAC (Site Code: 002269)
- o Long Bank SAC (Site Code: 002161)
- o Raven Point Nature Reserve (Site Code: 000710)
- o Wexford Harbour and Slobs SPA (Site Code : 004076)
- o The Raven SPA (Site Code: 004019)

Information related to these designated sites is available to download from <http://www.npws.ie/protectedsites>

Plans or projects proposed to occur within or adjacent to Natura 2000 designated sites (Special Areas of Conservation and Special Protected Areas) are required under Article 6(3) of Council Directive 92/43/EC and Regulation 42 of the European Communities (Birds and Natural Habitats) Regulations (SI 473/2011) to assess the potential significance to the nature conservation interests of those designated sites.

Guidance on this process can be found within "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* published by the European Commission in 2001. A recent document entitled "Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities" published by the Department of the Environment, Heritage & Local Government is available to download on <http://www.npws.ie/planning/appropriateassessment/>

The proponent should ensure that the following information is included in the Assessment to ensure the potential for interaction with marine habitats conservation interests are fully evaluated:

- I. Full description of proposed operation/activity
  - A full description of the proposed development methodology including specific detail as to how the main elements of the proposed development are to be executed e.g. type of dredging vessel *etc.*
  - Are there similar operations/activities already or planned to occur in the locality? Would the proposed works act in conjunction with any existing or planned developments?
  - A copy of the pollution contingency plan for operations included in the proposed plan.

- II. Baseline description of relevant environment

The projected area of impact to Annex I habitats, both directly and indirectly (as may occur from changes in the hydrodynamic environment), from the proposed development should be detailed to include whether this would interact with the noted Natura sites and Qualifying Interest habitats. This assessment should also evaluate whether the proposed development would interact with the structure and function of those features.

In addition an assessment of the potential interaction of the proposed works must be completed due to the likely presence of marine mammals in the vicinity. The potential for negative interaction with the proposed operations through potential collision and disturbance events should be considered. The protection afforded to these species stems from a number of legislative instruments:

- All cetaceans are listed under Annex IV (including those in Annex II) of Council Directive 92/43/EEC (the Habitats Directive). Accordingly, under Article 12 of that Directive, it is an offence to deliberately capture, disturb or kill a cetacean or take actions that result in deterioration or destruction of their breeding sites or resting places. This has been transposed into Irish Law by Regulation 51 of the European Communities (Birds and Natural Habitats) Regulations (SI477 of 2011).
- All marine mammals are protected wild animals under the Fifth Schedule, which includes all cetacean and seal species, of the Wildlife Act (39 of 1976) and Amendments. Under Section 23 (as amended in 2000), it is an offence to kill, injure or wilfully interfere with or destroy the breeding place or resting place of any protected wild animal.
- In addition it should be noted that consent cannot be given by the Consenting Authority under Regulation 63 (7) of the European Communities (Birds and Natural Habitats) Regulations 2011 without consideration of the potential interaction with these species.

A baseline description of the presence of marine mammals should be included as part of the submission to the EPA/Department of the Environment, Community and Local Government. The applicant may find useful resources on <http://www.npws.ie/marine/marinereports/> specifically in relation to seals and cetaceans using the surrounding waters. Useful information is also available from the website of the Irish Whale and Dolphin Group (<http://www.iwdg.ie>). The presentation of data related to marine mammal species must be of sufficient resolution to predict the likely interaction with those species over both a spatial and temporal scale. Such an assessment should include scientifically supported consideration of potential impacts from the operation of associated vessels/plant, incorporating as appropriate the identification of measures required to mitigate such impacts or a supported conclusion that the risk to these

species is negligible and no mitigation is required. It is recommended that a suitably qualified marine ecologist should be involved in undertaking relevant assessments.

Some useful information related to noise producing activity and evaluations of interactions with marine mammals with similar activities in "Guidance to Manage the Risk to Marine Mammals from Man-made Sound Sources in Irish Waters" published by the Department of Arts, Heritage and the Gaeltacht available to download from:

<http://www.npws.ie/marine/bestpracticeguidelines/>

Kindly forward any further information electronically to the following email address:

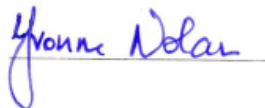
[manager.dau@ahg.gov.ie](mailto:manager.dau@ahg.gov.ie)

Alternatively, hard copy documentation associated with the above can be referred to the DAU at the following address:

The Manager,  
Development Applications Unit,  
Department of Arts, Heritage and the Gaeltacht,  
Newtown Road,  
Wexford

Finally, the above observations and recommendations are based on the papers submitted to this Department on a pre-planning basis and are made without prejudice to any observations the Minister may make in the context of any consultation arising on foot of any development application referred to the Minister, by the planning authority, in his role as statutory consultee under the Planning and Development Act 2000, as amended.

Is mise le meas,



**Yvonne Nolan,**  
Development Applications Unit  
Tel: (053) 911 7382  
E: [manager.dau@ahg.gov.ie](mailto:manager.dau@ahg.gov.ie)

## Appendix 2

# Oil Spill Contingency Plan

DOCUMENT		ISSUED BY	Harbour Master
TITLE	OIL SPILL RESPONSE PLAN	DATE	26 <sup>th</sup> September 2013
		REVISION	5

# OIL SPILL CONTINGENCY PLAN 2013



Capt. Aedan Jameson  
Operations Manager  
Harbour Master

*Rosslare Europort*

DOCUMENT	OSRP 2013	ISSUED BY	Harbour Master
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## 1. PREFACE

### 1.1. Port Authority

#### 1.1.1. Fishguard & Rosslare Railways & Harbours Company

Rosslare Harbour was developed in the late nineteenth and early twentieth century by the Fishguard and Rosslare Railways & Harbours Company **FRRHCo** a company incorporated in England which still owns the original harbour property.

A shareholders' agreement dated 27th May 1898 between the **FRRHCo** and its then shareholders, the Great Western Railway of England **GWR** and the Great Southern and Western Railway of Ireland **GSWR** amended by a supplementary agreement dated 14th February 1903 between the same parties, provides inter alia that:

"... the **GSWR** shall work manage and maintain the portion of the **FRRHCo** undertaking on the Irish side...."

"... the **GSWR** shall... be entitled to the receipts on the traffic on the portion of the... undertaking in Ireland and shall be responsible for... all working and other expenses incurred on that portion and shall indemnify and hold harmless the [**GWR** and the **FRRHCo**] and their respective undertakings from and against all actions, suits, claims and demands in respect of any liability whether in regard to capital or revenue for expenditure incurred on the Irish portion of the said undertaking".

"... the **GSWR** shall indemnify and hold harmless the [**GWR** and the **FRRHCo**] respectively against all damages and expenses of every kind occasioned to them by reason of any act, default or omission of the **GSWR** their contractors, workmen or servants on the Irish side in the exercise of the powers of the **FRRHCo**..."

The original and supplementary agreements were confirmed and made binding upon the parties by the Fishguard and Rosslare Railways and Harbours Acts of 1899 and 1903 respectively.

As a result of the above agreements, effective control and occupation of the railway and port on the Irish side was transferred from **FRRHCo** to **GSWR**. The only significant exception to this was that the power to make bye-laws was retained by **FRRHCo**.

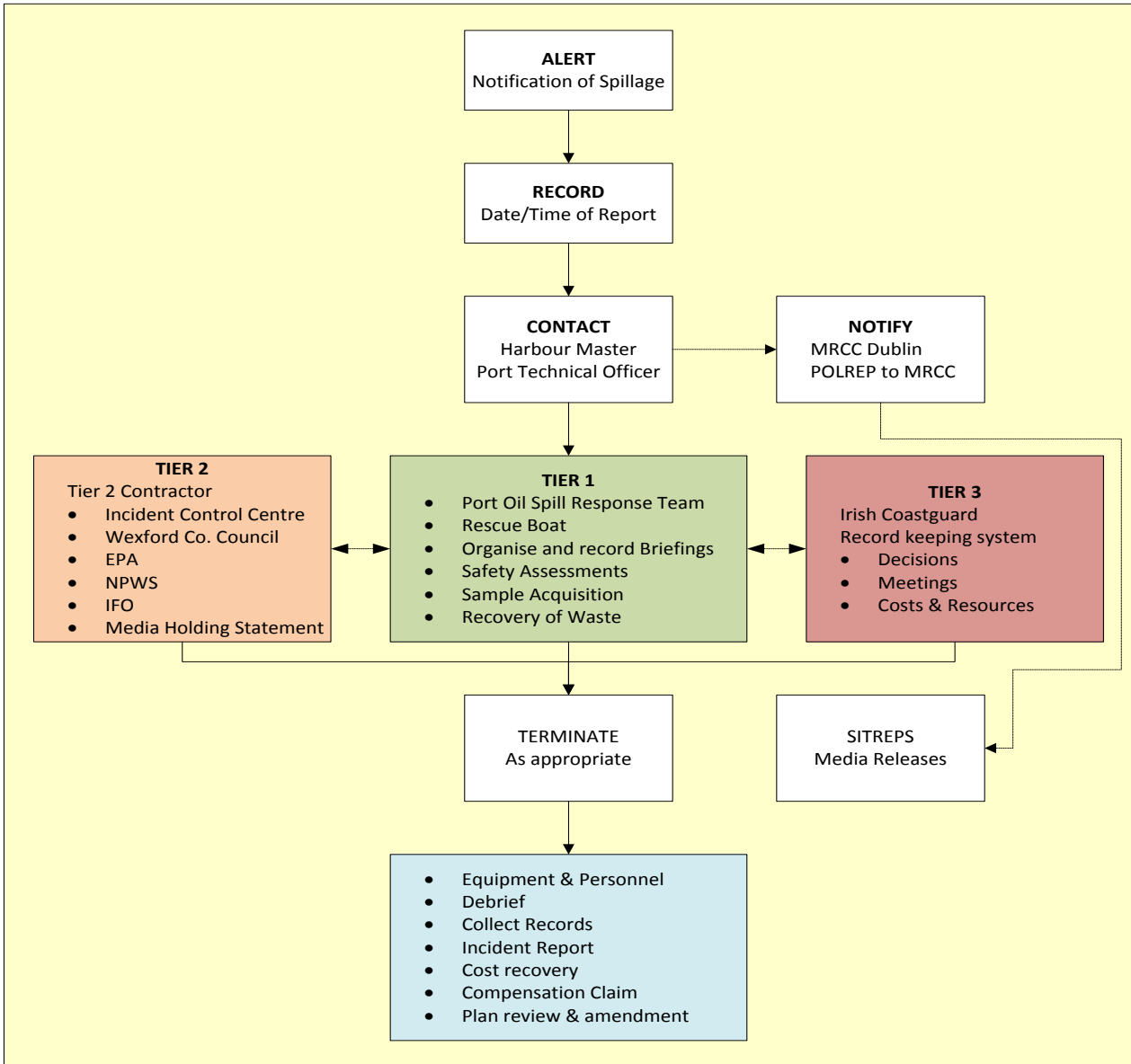
#### 1.1.2. Iarnród Éireann [IE]

Following a series of rationalisations, amalgamations and reorganisations of the Irish railway industry over the intervening period, **GSWR** no longer exists, and **IE** is the successor in title to that company. **IE** is therefore obliged to work, manage and maintain Rosslare Harbour and is entitled to all the Harbour's revenue and responsible for all of its expenses. **IE** is therefore the de facto port authority for Rosslare Harbour.

The original harbour property owned by **FRRHCo**, together with certain adjacent land owned by **CIE** (the parent company of **IE**) and reclaimed land held by **IE** under lease, are managed and operated by **IE** as a single undertaking trading under the **ROSSLARE EUROPORT** brand.

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## 1.2. Activation Chart.



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### 1.3. IRCG Letter of Approval

To be inserted

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## 1.4. Revisions, Amendments, Date etc.

### 1.4.1. Procedure

Any changes to the situation within the Port affecting the Plan, or any other updates will be emailed as a new revision to all holders of the plan within one month of such change. Such revisions will be made in the light of the experience gained from exercises, changes in risk, Port operations, training or legislation.

The plan and its effectiveness will be reviewed as a matter of procedure after all spill responses whether mobilised and operational or just notification. A written record of these reviews will be kept by the Harbour Master in the Marine Incident Database.

### 1.4.2. Review

The plan will be reviewed, by the Harbour Master, at least annually.

### 1.4.3. Approval

This document will be re-submitted to the Irish Coast Guard, every five years.

## 1.5. Document Control Procedure

The Rosslare Europort Oil Spill Response Plan is a controlled live document and is issued to the following:

ROSSLARE EUROPORT	
1	Harbour Master
2	Port Technical Officer
3	Port Operations Tower
4	W:\Safety Statement\Marine\Harbour\Oil Pollution Response
5	Maintenance Foreman
SHIPS	
6	Senior Master, STENA EUROPE
7	Senior Master, ISLE OF INISHMORE
8	Senior Master, OSCAR WILDE
9	Master, CELTIC HORIZON
10	Master, MT KEEWHIT
11	Master, MT MERSEY SPIRIT
OTHERS	
12	Marine Officer, Wexford Co. Council
13	Harbour Master, Port of Waterford

Table 1 - Plan Distribution List

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Any amendments to this plan will be emailed by the Harbour Master to all registered plan holders. A record of the amendments and the date of issue will be kept is recorded in the header.

### 1.6. State responsibility for controlling document, reviewing and issuing amendments.

The Harbour Master is responsible for the control, review and amendment of this document.

### 1.7. Distribution copy number and copy holder

See Table 1.

### 1.8. Glossary

ASI	Areas of Scientific Importance
BPEO	Best Practical Environmental Option
BH	Braemar Howells
CD	Chart Datum
CIE	Coras Iompair Eireann
EPA	Environmental Protection Agency
HFO	Heavy Fuel Oil
HWS	High Water Springs
IE	Iarnród Eireann
IFO	Irish Fisherman's Organisation
IMO	International Maritime Organisation
IRC	Incident Response Centre
IRCG	Irish Coast Guard
ITOPF	International Tanker Owners Protection Fund
LOA	Length Overall
LFO	Light Fuel Oil
LWS	Low Water Springs
MBC	Media Briefing Centre
MFO	Medium Fuel Oil
MGO	Marine Gasoil
MOWCC	Marine Officer, Wexford Co. Council
MRC	Marine Response Centre
MRSC	Marine Rescue Sub-Centre
MRCC	Maritime Rescue Coordination Centre
NCP	National Contingency Plan
NPWS	National Parks & Wildlife Service
OPRC	Oil Pollution Preparedness and Response Co-operation Convention
OSC	On-scene Commander



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OSCC	Oil Spill Coordinating Centre
P&I	Protection & Indemnity
POLREP	Pollution Report
SAC	Special Area of Conservation
SCU	Salvage Control Unit
SFPA	Sea Fisheries Protection Authority
SRC	Shoreline Response Centre
WCC	Wexford Co. Council

**Table 2 - Glossary**

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## 2. STRATEGY

### 2.1. Introduction

An Oil Spill Response Plan **OSRP** for Rosslare Europort is required by the Sea Pollution (Amendment) Act, 1999. It has been prepared in accordance with the template “expanded contents of local authority Oil/HNS contingency plan annex 3” as issued to the Harbour Master by IRCG in February 2012.

### 2.2. Purpose of the Plan

This Port Pollution Plan is designed to:

- Guide response personnel at Rosslare Europort through the process required to manage an Oil/HNS spill originating from operations within Harbour Limits.
- Initiate an appropriate response to an Oil/HNS spill incident within Rosslare Europort and to set in motion the necessary actions to stop or minimise the pollution and to reduce its effects on the environment.
- Act as a guide for the Harbour Master at Rosslare Europort, in the actions and decisions that will be required in an incident response.
- Describe the tiered response strategy that takes into account the spill risk associated with the operation; the nature of the hydrocarbons that could be spilt; the prevailing meteorological and hydrographic conditions and any environmental sensitivity of the surrounding area.

### 2.3. Area of Operation

The Port’s statutory responsibility covers the area [*“Rosslare Europort Harbour Limit”*] marked on the top right-hand side of the plan of UKHO Chart 1772 below:

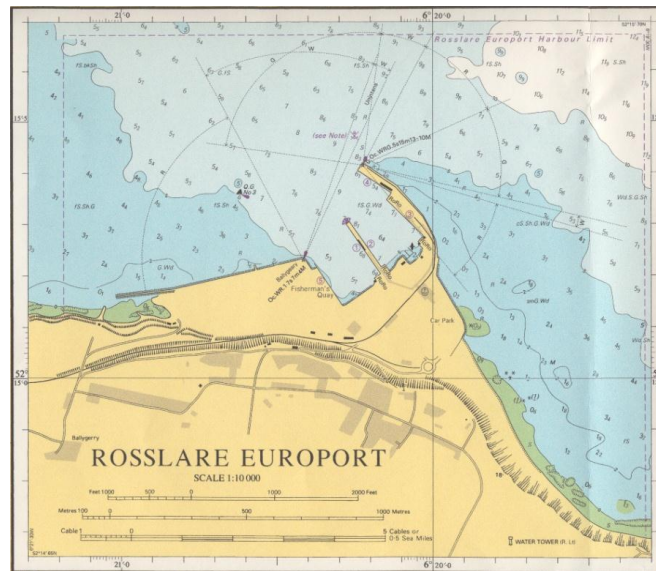


Figure 1 - Plan of ROSSLARE EUROPORT

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## 2.4. Harbour Limits

The limits of the Harbour Area are described in section 3 of the Fishguard and Rosslare Railways & Harbours Act, 1900 as:

*"...include so much of the shore and waters of Greenore and Ballygeary or South Bay below high-water mark as is comprised within an imaginary line drawn from high-water mark at a point thereon 4000 feet from the shore end of the existing viaduct leading to the existing Pier or Breakwater measured in a southeasterly direction, approximately where a road leads down to the beach in the townland of Waddingsland, and thence carried due north for a distance of 6000 feet, thence carried due West for a distance of 7000 feet, thence carried due South until it terminates at high-water mark on the foreshore at the western side of the existing viaduct about 3650 feet measured in a westerly direction from the shore end of the existing viaduct which leads to the existing pier or breakwater.."*

## 2.5. Lead Authority

The Lead authority for the implementation of this Plan will be Iarnród Éireann, Port Authority at Rosslare Europort, in the event of an incident with Oil/HNS within its Harbour Limits. The Harbour Master is responsible for implementing the response to such an oil spill.

### 2.5.1. Managing the response to a major Pollution incident

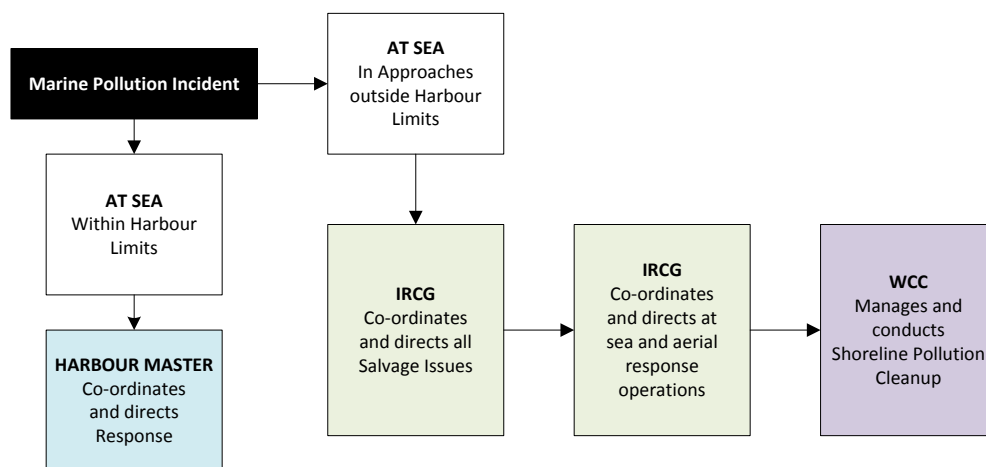


Figure 2: Management of Pollution Incident

## 2.6. Relationship to other Plans

### 2.6.1. WCC Coastal Pollution Response Plan

The Harbour Master is on the circulation list for the WCC Coastal Pollution Plan. Close cooperation is maintained with the Marine Officer, WCC as the coastline is adjacent to the Harbour Limits.

### 2.6.2. Vessel SOPEP

A copy of each scheduled vessel SOPEP is forwarded to the Harbour Master annually, or subsequent to a major update.

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### 2.6.3. IRCG National Contingency Plan

In the event of an Oil/HNS spill incident which calls for a Tier 3 response **IRCG** may decide to implement the **NCP** and/or mobilise the Marine Pollution Response Team **MPRT** which may establish a local HQ in the Port.

### 2.7. Plan Format

This plan has been developed to deal only with Oil/HNS spillages which impact the quays and shorelines within the Harbour Limits of Rosslare Europort. It is secondary to the Port Emergency Plan which will always have precedence in any incident involving **safety of life**.

The document is sub-divided as follows:

Section	Element	Description
	Preface	Preliminary information.
1	Strategy	Policy details, contingency plans and organisation information
2	Action	Information for the user to use in following a clear path of actions to implement and assist in making decisions in responding to an incident.
3	Data Directory	Reference details on contacts, resources and products that will be required during an incident.
4	Appendices	Copies of documents referred to in the plan.

### 2.8. Roles and Responsibilities of Involved Parties

As per Section 1.5

### 2.9. Risk Assessment

#### 2.9.1. Introduction

The Port safety management system requires a risk assessment for all activities in a format that complies with the Rosslare Europort safety standard RE\_SMS\_006. The current assessment is included in Appendix III.

#### 2.9.2. Historical Information

Historically, the risk of oil spills has been very low due to the nature of the Port Business being conducted in the RORO Trade. Since April 2013, the risk levels have risen due to the introduction of bunkering alongside.

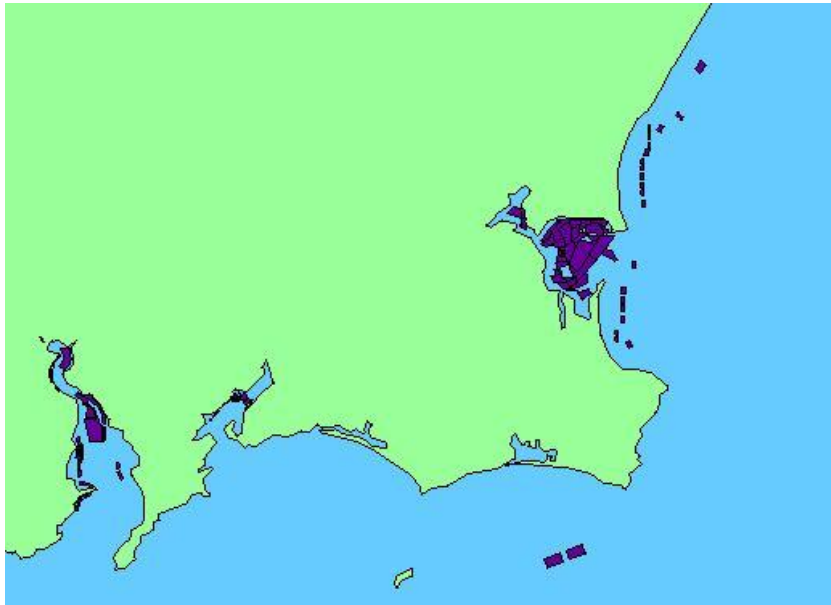
Incident records to-date are included in Appendix IV.

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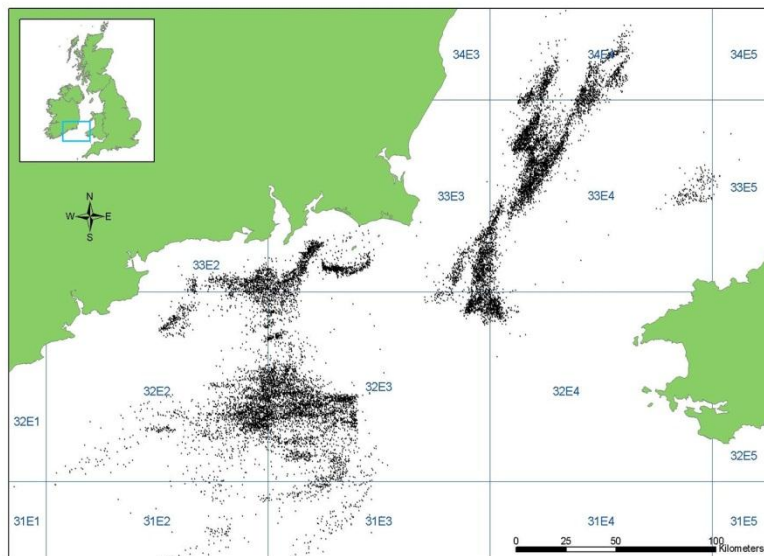
**2.9.3. Coastal Resources at Risk**

The information below describes the activities potentially at risk in the event of a pollution incident at Rosslare Europort where wind is blowing from between northeast and west southwest in direction. More northerly winds will result in a spillage being contained within the Port.

**2.9.3.1. Fishing**



**Figure 3 – Southeast Aquaculture Sites**



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Figure 4 – Scallop Areas in southeast

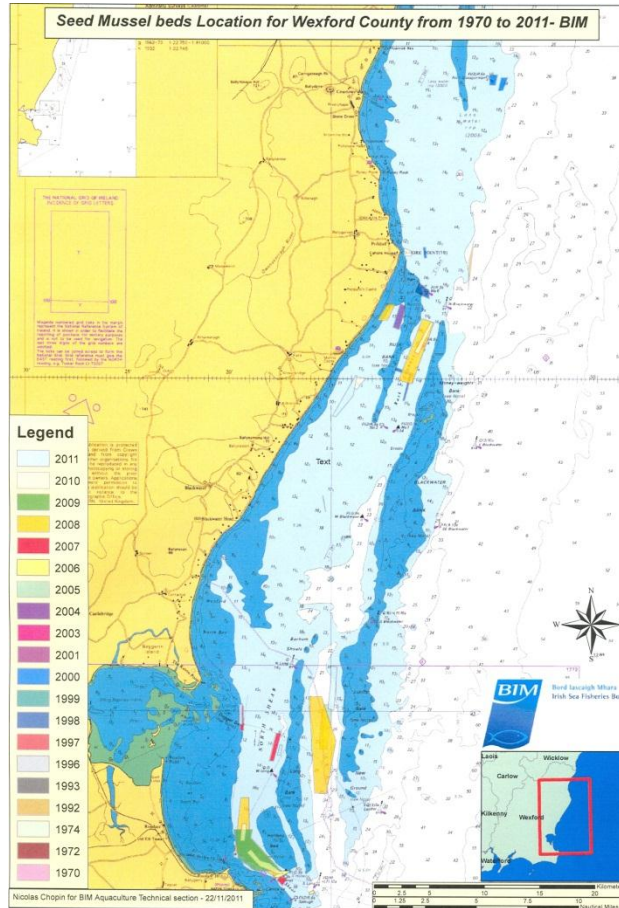
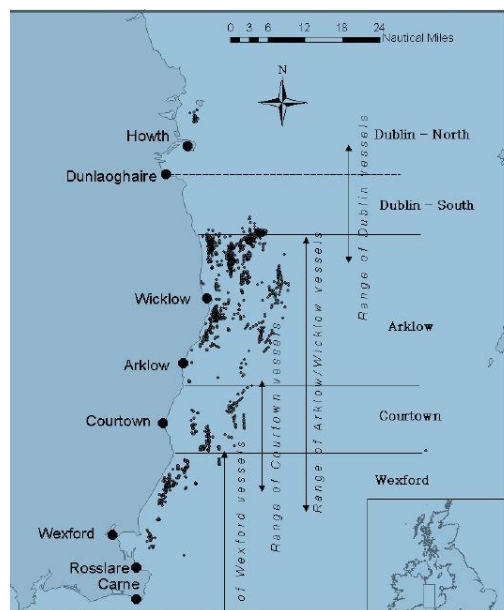


Figure 5 - Mussel Seed Beds



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Figure 6 - Whelk Areas on East Coast

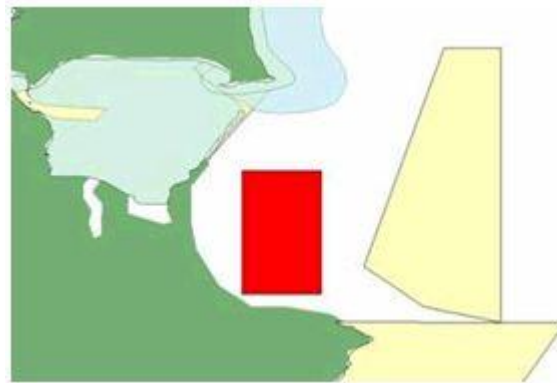


Figure 7 - Rosslare Bay Razor Fishery

### 2.9.3.2. Special Areas of Conservation

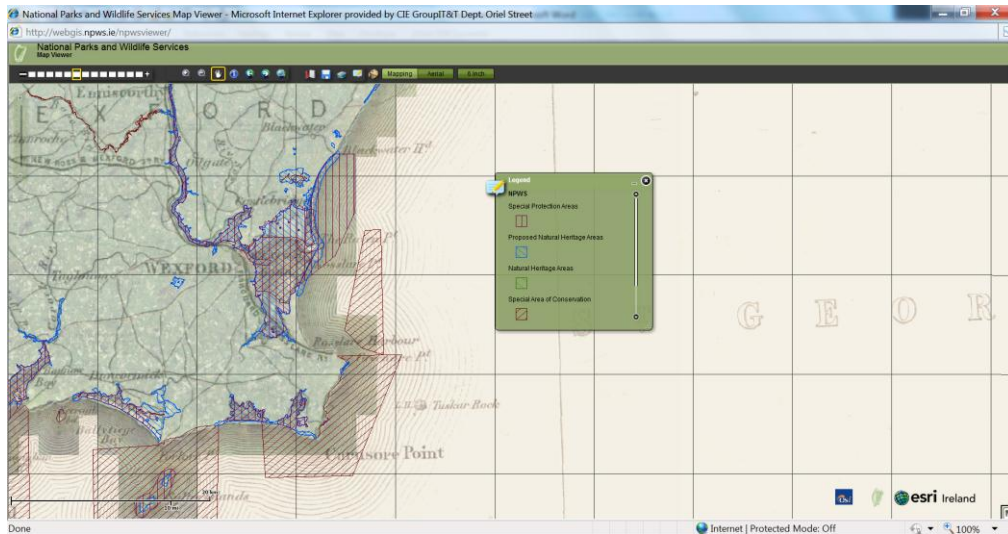
The WCC plan identifies designated coastal sites that may be threatened by a spillage and are adjacent to Rosslare Europort.

Name		Interest <sup>1</sup>	Rating <sup>2</sup>	Other Designations <sup>3</sup>
1	Cahore Polders	E	Nr	
2	Curraclloe	E,G	R	
3	Raven Point	E	N	NNR, SPA, RAM
4	North Slob	E	I	NNR, SPA, RAM
5	Wexford Harbour	E	I	SPA
6	South Slob	E	I	
7	Rosslare Sandhills	E	N	
8	St Helen's Harbour	G	N	
9	St Margaret's Shore	E	L	
Interest				
E	Ecological (including Botanical, Zoological, Ornithological).			
G	Geological (including Geomorphological).			
Ratings				
I	International			

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Name	Interest <sup>1</sup>	Rating <sup>2</sup>	Other Designations <sup>3</sup>
N	National		
R	Regional		
L	Local		
Nr	Not Rated		
Other Designations			
NNR	National Nature Reserve		
SPA	Special Protection Area [EC Birds Directive]		
RAM	Ramsar Convention Site		
RFF	Refuge for Fauna		

**Table 3 – Areas of Scientific Interest**



**Figure 8 – Special Areas of Conservation**



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Seabird Colonies	Rating	Colony Size <sup>2</sup>	Date of last Count	fulmar	Manx shearwater	gannet	cormorant	shag	Black-headed gull	Lesser black backed gull	Herring gull	Greater black backed gull	kittiwake	Sandwich tern	Roseate tern	Common tern	Arctic tern	Little tern	guillemot	razorbill	puffin
Raven Point	N	30	1993															+			

2. Colony Size: Figures indicate apparently occupied nests or individual birds in the case of auks.

**Table 4 – Seabird Colonies**

	Wetland Site	Rating	Mean peak Nos	No Spp of International Importance	No of Spp of National Importance
1	Cahore Marshes	N	5,291	0	2
2	North Slob	I	18,276	3	6
3	Wexford harbour	I	11,142	2	12
4	South Slob	I	14,788	2	8

**Table 5 – Wintering Waterfowl**

### 2.9.3.3. Marine Mammals

During the seal breeding season the adults will give birth and leave their pups unattended for periods on the rocky shorelines of Tuskar Rock. At this period seal pups will be vulnerable to any oil spill that comes ashore. NPWS should be alerted if there is a threat to vulnerable seal pups or reports of oiled animals. The specialists will have the experience and equipment to deal with these animals.

### 2.9.3.4. Rosslare Strand.



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Figure 9 - Rosslare Strand

#### 2.9.4. Risk Assessment Summary

A summary of risk assessments includes five main scenarios which are included in Section 2.9.5. All risk assessments are contained in the General Risk Register in compliance with IE Standard 5.

#### 2.9.5. Scenarios

Scenario	Incident	Description
1	Bunkering – Burst Pipe	Burst Pipe or spillage at vessel bunkering station and/or bunkering vessel.
2	Leakage from Road Tanker	Gasoil to Fishing Vessels at Fisherman’s Quay or other Berths
		Gasoil/IFO 380 to RORO Vessels at Berths 1 2 and/or 3
3	Small Boat Harbour	Occasional spillages of petrol/diesel in small quantities
4	Fishing Vessels	Spillages from bilge pumps
5	External Incident/Port of Refuge	Oil residues enter harbour from passing shipping or fishing boat discharges
6	Washing down vehicle decks	Carbon residue from deckhead discharged into Harbour.

Table 6 – Risk Scenarios

### 2.10. Fate of Spilled Oil

#### 2.10.1. Fate Processes

The ‘fate’ of oil when it is released refers to the processes that will affect the oil, these processes will have different effects depending on the oil type. It is important to understand these processes and in some way predict how oil will move and what properties it will have in order to formulate the most effective and efficient response plan using the resources available. The three primary processes of spilled oil on the water are drifting, spreading, and weathering; weathering processes include **evaporation, emulsification, dispersion, dissolution, sedimentation, photo-oxidation**. These processes are summarised in figure 10 and table 7 below. The relative importance of these processes will depend on the weather conditions and the oil type.

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### 2.10.2. Fate – General Diagram

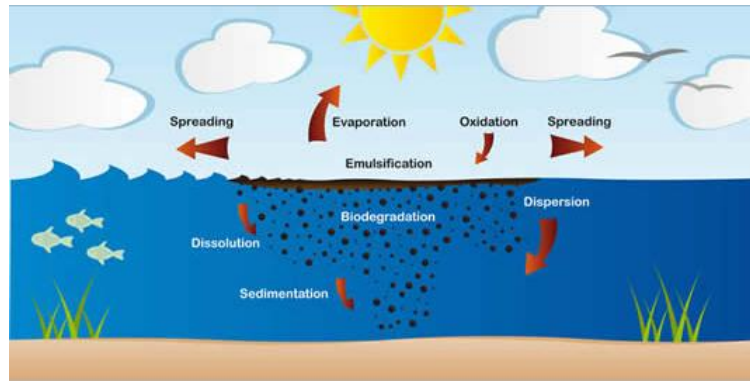


Figure 10 – Fate of Oil on Water

Term	Description
Spreading	Increase in the length and breadth of the oil slick as it spreads and thins on the sea surface, will depend on viscosity of oil, current, tides, waves and wind
Evaporation	Evaporation of lighter hydrocarbons from the oil to the atmosphere.
Emulsification	Formation of water in oil emulsions, resulting in an increase in oil viscosity. Oils with a high asphaltene content are more likely to form stable emulsions
Dispersion	The formation of oil droplets due to breaking waves, resulting in transport of oil from the sea surface into the water column.
Dissolution	Physical-chemical process resulting in oil from the oil slick or from suspended oil droplets dissolving into the water column.
Sedimentation	Increase in density of oil due to weathering and interaction with suspended sediments or material of biological origin. Deposition of material to the sea floor.
Stranding	Impact of oil on the shoreline, dock walls or sides of vessels it may then refloat and move elsewhere.
Oxidation	Chemical transformation of petroleum hydrocarbons caused by sunlight.
Biodegradation	Biological-chemical process altering or transforming hydrocarbons through the action of microbes and/or the ingestion by plankton and other organisms.

Table 7 – Oil Weathering Processes

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## 2.11. Quantification of a Slick

### 2.11.1. Manual Plotting of oil/HNS movement

In the event of a spill in the harbour a slick will be predominately under the influence of the wind as, until it reaches open water, there is very little current. If the oil did spread outside of the immediate port area then there is a residual current running to the north east, tidal conditions on the day will need to be taken into consideration. As a general rule of thumb an oil slick will travel on a trajectory 100% of the speed of the current and 3% of the wind.

### 2.11.2. Computer Spill Model

Not applicable to Rosslare Europort

### 2.11.3. GIS based Management System

Not applicable to Rosslare Europort

### 2.11.4. Quantification

The quantification of an oil spill should be determined as soon as possible. This establishes resources that will be required and therefore the actions taken.

Pump Rate (t/hr)	Emergency Shutdown (s)				
	10s	20s	30s	45s	60s
450	1250	2500	3750	5625	7500
425	1181	2361	3542	5313	7083
400	1111	2222	3333	5000	6667
375	1042	2083	3125	4688	6250
350	972	1944	2917	4375	5833
325	903	1806	2708	4063	5417
300	833	1667	2500	3750	5000
275	764	1528	2292	3438	4583
250	694L	1389L	2083L	3125L	4167L
225	625L	1250L	1875L	2813L	3750L
200	556L	1111L	1667L	2500L	3333L
175	486L	972L	1458L	2188L	2917L
150	417L	833L	1250L	1875L	2500L
100	278L	556L	833L	1250L	1667L
50	139L	278L	417L	625L	833L
25	69L	139L	208L	313L	417L
10	28L	56L	83L	125L	167L

Table 8 – Bunkering Spillage due burst pipe (Litres)

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The primary method of quantification should be from the source or vessel. In the case of bunkering alongside, an estimate may be made using Table 8. Whilst information is forthcoming, the following procedure may be used.

The colour of oil on the water will indicate its thickness. Using the BONN Agreement Oil Appearance Code it is possible to calculate the volume of oil based on the surface area of the slick and the colour of the oil.

Table 9 below gives the thicknesses for 5 categories of colour.

CODE	DESCRIPTON APPEARANCE	LAYER THICKNESS	LITRES PER KM <sup>2</sup>
1	Sheen (silvery/grey)	0.04 to 0.30	40 – 300
2	Rainbow	0.3 – 5.0	300 – 5000
3	Metallic	5.0 – 50	5000 – 50,000
4	Discontinuous true oil colour	50 – 200	50,000 – 200,000
5	Continuous true oil colour	200	>200,000

**Table 9 – Oil Appearance Colour Code**

## 2.12. Spill Response Strategy

### 2.12.1. Use of section

This section describes the generic strategy for responding to Oil/HNS material contamination at Rosslare Europort. Prior to any response involving staff, a full risk assessment must be conducted and agreed with staff engaged in the response.

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**2.12.2. Flow Charts**

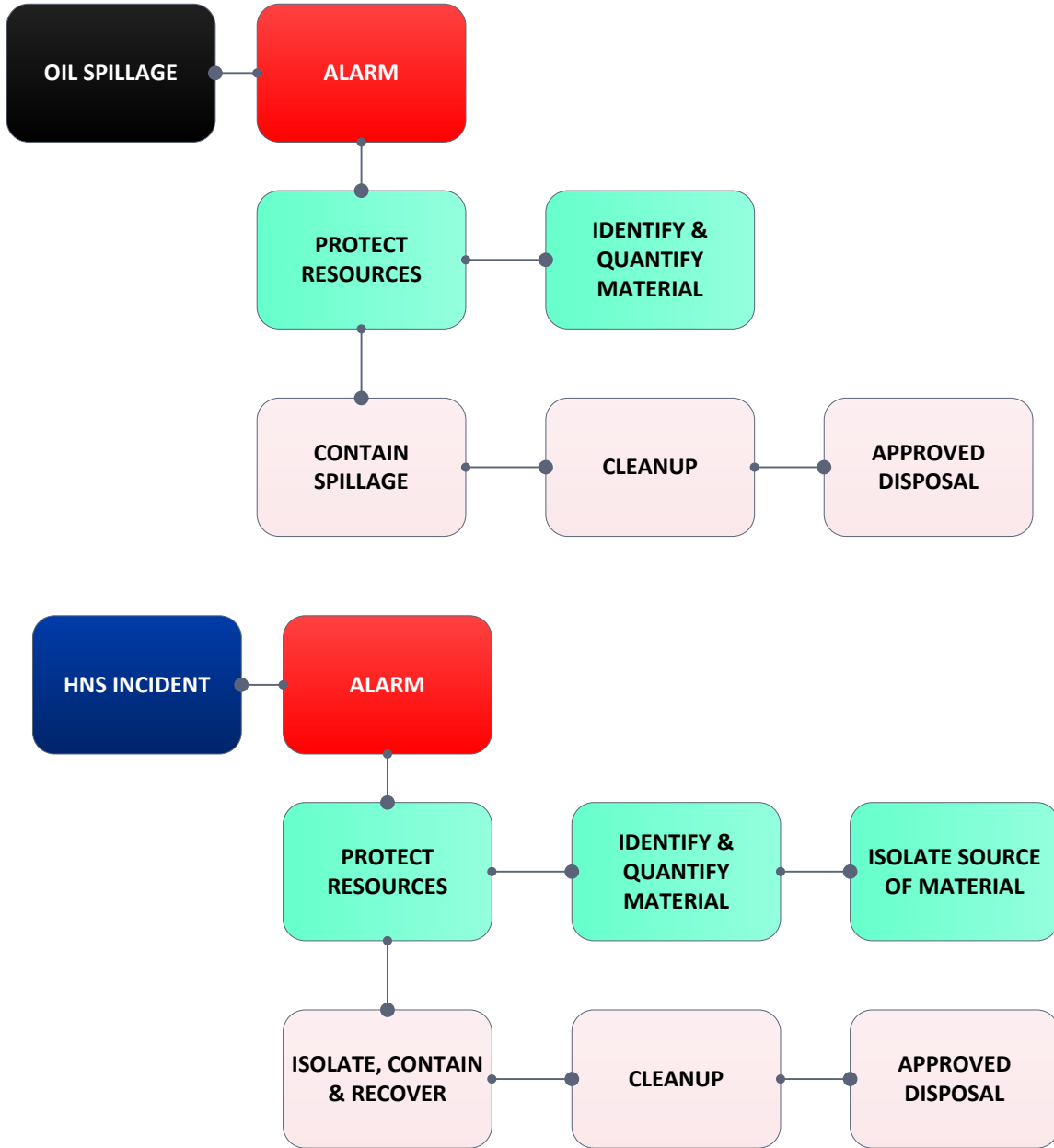


Figure 11: Oil/HNS Spill Strategies

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### 2.12.3. Sensitivity Index

This concept was developed in the 1970s to provide oil spill response coordinators with a means of evaluating a shoreline's sensitivity to oil spill damage (Gundlach and Hayes 1978). The basis of the sensitivity index is the relationship between the physical and biological characteristics of a coastal environment. The relationship between the physical and biological characteristics of a coastal environment is governed by four main factors:

- Relative exposure to wave and tidal energy,
- Shoreline slope,
- Substrate type (grain size, mobility, and penetration),
- Biological productivity.

At Rosslare Europort, cleaning of quay walls and/or the rock should be straightforward. Bulk oil can be recovered manually, or by using vacuum tankers from the quay or RORO vehicle decks, or other skimmers on pooled oil. Low pressure flushing with sea water may also be employed to wash oil residues to collection points. Final cleaning usually requires high pressure flushing, the pressure needed depending on how firmly the oil is adhering to the quay or rock. Detergents or other materials would not be used without IRCG approval. If the residual oil is stuck very firmly to the rock, or if a very high degree of cleanliness is required, then it may be necessary to resort to high pressure hot water washing or even sand blasting. Such "aggressive" techniques will cause damage to the natural fauna and flora living on the rocks, and so they should be used with caution. In many cases it will be most appropriate and least damaging to leave natural processes, such as wave action and scouring, to deal with any residual oil over time.

Greater problems are caused where oil penetrates deeply into boulders, cobbles or gravel since it is rarely practical to do more than remove surface accumulations. If amenity or wildlife concerns dictate a more thorough clean-up, the most effective technique is likely to be sea water flushing, with the containment and collection of any oil that is released using booms and skimmers. On cobble or gravel beaches it may be appropriate to bulldoze the contaminated beach material into the surf zone to take benefit of natural cleaning processes. In circumstances where residual oil on shorelines might pose a threat to breeding colonies of marine mammals or birds or seals, and where other techniques might cause damage through greater disturbance, it may be appropriate to cloak oily haul out areas and access routes with some form of natural sorbent, such as peat.

### 2.12.4. Matrix for cleanup for the named Oils/HNS

IFO 380	Contain/Recover/Cleanup with approved materials
Gasoil, Luboils etc.	Monitor & Evaporate

Table 10 – Cleanup Matrix

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TITLE	ELEMENT 1 - STRATEGY	DATE	16 <sup>th</sup> October 2013
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## 2.13. Training & Exercise Policy

### 2.13.1. Training policy

An objective of the Company Health & Safety Policy is that all employees are

- Competent, informed, instructed and adequately trained in health and safety matters
- Provided with an appropriate level of supervision.

When responding to an incident all employees will have received training from an accredited training organisation – normally as part of the Tier 2 Support Agreement.

Where practicable, the Port will avail of the subsidised training courses provided by IRCG on an annual basis. The objective is to provide sufficient cover from each operative shift.

IMO Level	Description
1	For first responders and all staff who will operate oil spill response equipment and need to be fully aware of correct and safe deployment techniques etc.
2	For person(s) who will have a management role or be in a position of responsibility for shoreline clean-up, eg COPO, On Scene Commanders and Beachmasters
3	For person(s) involved in oil spill management to consider the political and media pressures, the safety issues concerning response personnel and the public and the post-operational requirements
Certificates	IRCG Certificates
	Braemar Howells Attendance Certificates

Training records are maintained on the safety management database and in each individual's personal HR file. Table 11 below is an extract from the database.

OIL SPILL RESPONSE					
IMO Level * means that the person has attended an IRCG course					
IMO Level	Employee No	First Name	Last Name	Pollution	Shift
3*	415677	CAPT. AEDAN	JAMESON	26-Sep-13	HARBOUR MASTER
2*	327581	TONY	KEHOE	30-Sep-10	PORT TECHNICAL OFFICER
1	399426	GER	GLEESON	24-Apr-13	CONTROLLER
1	662356	DECLAN	MURPHY	25-Apr-13	CONTROLLER
1*	412589	CIARAN	NEWPORT	17-Sep-10	CONTROLLER
1	407429	NIALL	BUSHER	24-Apr-13	BLUE
1	410853	ANTHONY	CORISH	24-Apr-13	BLUE
1	802018	KEITH	MORRIS	24-Apr-13	BLUE
1	660973	DECLAN	NAESSENS	24-Apr-13	BLUE



DOCUMENT	OSRP 2013	ISSUED BY	Harbour Master
TITLE	ELEMENT 1 - STRATEGY	DATE	16 <sup>th</sup> October 2013
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OIL SPILL RESPONSE					
IMO Level * means that the person has attended an IRCG course					
IMO Level	Employee No	First Name	Last Name	Pollution	Shift
1*	410586	JOHN	O'HAGAN	24-Apr-13	BLUE
1*	730025	MICHAEL	SINNOTT	24-Apr-13	BLUE
1*	434167	DANNY	ENNIS	17-Sep-10	RED
1*	413488	ROBERT	BUSHER	25-Apr-13	RED
1	342262	TJ	CAHILL	25-Apr-13	RED
1	393215	JOHN	ELLARD	25-Apr-13	RED
1*	407488	PAUL	TOBIN	25-Apr-13	RED
1*	416274	ART	SHEIL	25-Apr-13	RED
1*	412597	SEAN	MEYLER	25-Apr-13	RED

Table 11 - Oil Spill Response Team

## 2.14. Exercise Policy

EXERCISE PROGRAMME FOR THE USE OF THIS PLAN		
Exercises	Timing	Type of Exercise
Inspection and use of Equipment	6 months	Inspect and ensure availability for use the equipment, updating personnel in procedures and use.
	Following any incident	
Review of Plan	Annually	Desktop review
Oil Spill Response (Deployment)	Annually	Simulated incident involving a vessel and coinciding, if practicable, with emergency or security annual exercise.
	Annually	Level 2 Contractor programme
IMO Level Training	Every 5 years	Training & refresher as per IRCG schedules

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### 3. ACTIONS

#### 3.1. Initial Response Procedures

##### 3.1.1. Use of this Section

This section establishes the reporting procedures which should be followed in the event that an oil spill occurs within the area covered by the Rosslare Europort Oil Spill Response Plan. The extent and notification of external organisations and authorities will be determined by the initial classification of the incident. Responsibility for external notification and completion of the Irish Coastguard POLREP rests with the Harbour Master.

##### 3.1.2. Immediate Response Initiation

<b>NOTIFICATION MATRIX</b>		
<b>Organisation</b>	<b>Contact</b>	<b>Details</b>
<b>TIER 1</b>		
<b>IRISH COASTGUARD</b>	MRCC Dublin	T 01 6220922 F 01 6620795
<b>TIER 2</b>		
<b>OIL SPILL CONTRACTOR</b>	BRAEMAR HOWELLS	T +44 1293 544482 M +44 (0) 7879 664842 E harbourmaster@wexfordcoco.ie
<b>Harbour Master PORT OF WATERFORD</b>	Capt. Darren Doyle	T 051 301403 M 087 2224961 E dd@portofwaterford.com
<b>Marine Officer WEXFORD CO. COUNCIL</b>	Capt. Philip Murphy	T 053 9129955 M 087 0507071 E harbourmaster@wexfordcoco.ie
<b>TIER 3</b>		
As for Tier 1 & 2		

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### 3.1.3. POLREP

<b>PART 1: INITIAL POLLUTION REPORT</b>			
<b>A</b>	<b>Classification of Report</b> [Delete as necessary]		
	(i) Doubtful	(ii) Probable	(iii) Confirmed
<b>B</b>	<b>Observation Date</b>	<b>G</b>	<b>Source of Pollution</b>
	<b>Observation Time</b>		<b>Cause of Pollution</b>
	<b>Observer</b>	<b>H</b>	<b>Details of other vessels in the area</b>
<b>C</b>	<b>Position of Pollution</b> [State geographical position or range/bearing from prominent local landmark]	<b>J</b>	<b>Photographs taken?</b>
	<b>Extent of Pollution</b> [Litres/Barrels/Tonnes]		<b>Samples taken ?</b>
	<b>Size of Polluted Area</b> [Approx m <sup>2</sup> ]	<b>L</b>	<b>Forecast of likely effect of Pollution</b> [Arrival on coastline with likely timing]
<b>D</b>	<b>Wind Velocity</b>	<b>M</b>	<b>Names of other organisations informed</b>
	<b>Tidal Height</b> [Rising/Falling]		<b>N</b>
<b>E</b>	<b>Sea-State/Wave Height</b> [m]		
<b>F</b>	<b>Pollution Type</b> [oil/crude/diesel/garbage/chemicals]		
	<b>Pollution Appearance</b> [Liquids, Floating Solid, Liquid Oil, semi-liquid sludge, tarry lumps, weathered oil, discolouration of the sea, visible vapour]		

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### 3.1.4. Instructions for completing POLREP

All spills are to be reported by whatever means as quickly as practicable. Responsibility for reporting of pollution rests with the Master in all cases involving a vessel. Any person either ashore or afloat, on becoming aware of pollution on the water within Rosslare Europort or liable to pose a threat to it, should report it whether or not the source is known.

The Harbour Master is responsible for ensuring that the POLREP is forwarded to the Irish Coastguard as soon as practicable.

### 3.1.5. Oil Spill Progress Report

The Harbour Master will arrange through the use of the POLREP to keep the Irish Coastguard informed until the end of the response.

## 3.2. Communications Plan

### 3.2.1. Port Oil Spill Response Communications Network

The incident response is coordinated by the Harbour Master [IMO Level 3] and/or Port Technical Officer [IMO Level 2]. If necessary, an emergency response centre will be established at or near the Harbour Master's Office, located in the Terminal Building.

TIER 1	ON-SITE	STATUTORY BODIES
RESPONSE TEAM [IMO LEVEL 1]	PORT TECHNICAL OFFICER [IMO LEVEL 2]	IRISH COASTGUARD
SORBENT STOCKPILE	DUTY CONTROLLER	WEXFORD CO. COUNCIL
RESCUE BOAT		CUSTOMS & EXCISE
TIER 2	HARBOUR MASTER	EPA
CONTRACTED EQUIPMENT	SPILL REPRESENTATIVE	SEA FISHERIES
TIER 3		NPWS
OTHER PORT EQUIPMENT	SHIPPING COMPANY	
IRISH COASTGUARD STOCKPILE	OTHER PORT USERS	

Table 12 - OSR Communications Network

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### 3.2.2. Press Release Procedure

<b>IARNRÓD EIREANN - CORPORATE RESPONSIBILITY</b>	
Manager, Media & Public Relations is responsible for dealing with the media. Port Management will liaise closely with his Dept. prior to the issue of a press release, information sheet, etc.	
<b>ROSSLARE EUROPORT - LOCAL RESPONSIBILITY</b>	
Harbour Master	The extent of the availability of the Harbour Master depends on the extent of his involvement in dealing directly with the management of the incident.
<b>Port Management</b> <ul style="list-style-type: none"> <li>• General Manager</li> <li>• Port Services Manager</li> </ul>	<ul style="list-style-type: none"> <li>• Deal initially with media enquiries</li> </ul>
	<ul style="list-style-type: none"> <li>• Arrange for sufficient staff to handle telephones connected to the number given to the public.</li> </ul>
	<ul style="list-style-type: none"> <li>• Ensure that telephone staff have up-to-date written information to deal with public queries.</li> </ul>
	<ul style="list-style-type: none"> <li>• Ensure that telephone staff have contact details of appropriate shipping company contacts.</li> </ul>
<b>Standing instructions</b>	<ul style="list-style-type: none"> <li>• <b>Under no circumstances are the contact details of a vessel to made available to the media.</b></li> </ul>
<b>Other duties Checklist</b>	Liaise with Wexford Co. Council Media Co-ordinator
	Liaise with Shipping Company media contacts
	Assist in establishing press centre in: <ul style="list-style-type: none"> <li>• Terminal Building</li> <li>• Messroom</li> <li>• Hotel Rosslare</li> <li>• Harbour View Hotel</li> </ul>
	Call in senior Iarnród Eireann management colleagues to assist.

Table 13 - Port Media Plan

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### 3.2.3. Press Holding Statement

<b>Statement issued by ROSSLARE EUROPORT</b>	
<b>Time</b>	
<b>Date</b>	
<b>Statement</b>	<p>Iarnród Eireann confirms that that a pollution incident has occurred [<i>state where and give a brief description</i>] in Rosslare Europort at approximately [<i>give time</i>]hrs.</p> <p>The Irish Coast Guard/Wexford Co. Council [<i>either or both as applicable</i>] have been advised. The quantity of <i>Oil / HNS</i> contamination is as yet not known. The Port has initiated an investigation into the incident and mobilised the clean-up response team to attend. Every possible effort is being maintained to minimise risk to personnel at the scene, and to contain and mitigate the effects of the spillage. Further details will be issued in due course by the Port Authority.</p>

## 3.3. Action Sheets

### 3.3.1. Person Sighting the Spill

1	Raise the Alarm by contacting the Port Operations Tower
2	Warn others in the vicinity of the leak/spill
3	If safe to do so, take any reasonable action to contain/reduce the leak or spill

**Checklist 1 - Person sighting Oil Spill Action Sheet**

### 3.3.2. Master of Vessel

As per section 6 of the Port Emergency Plan

1	Notify the Port Operations Tower
2	Implement the SOPEP Plan
3	Cease discharging/loading operations and attend to the problem

**Checklist 2 - Master Action Sheet**

### 3.3.3. Port Controller

1	Notify the Harbour Master
2	Notify the Port Technical Officer
3	If advised, notify the response team on duty.

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4	Turn the CCTV towards the incident, arrange for photos to be taken.
5	Write down all details, times etc.
6	Communicate with the ship on VHF Channel 12 as much as possible

**Checklist 3: Port Controller Action Sheet**

**3.3.4. Port Technical Officer**

1	Proceed to site of spillage
2	Obtain all available information
	• Source of Spill?
	• Cause of Spill?
	• Location and Type of Pollution incident?
	• Oil / HNS Type?
	• Quantity spilt – Area of Coverage – Extent of Spill?
	• Time of incident?
	• Appearance of Oil?
	• Potential Hazards – light ends
3	Determine initial response with Harbour Master
4	Establish risk assessment for cleanup operations
5	Arrange for samples of the spilt oil to be taken as soon as practicable before the oil weathers

**Checklist 4 - Port Technical Officer Action Sheet**

**3.3.5. Harbour Master**

1	Obtain all available information as per 3.3.4
	• Tide/Weather?
2	Ensure that an incident log has commenced
3	Arrange for POLREP report to be completed and emailed to IRCG
4	Arrange for costs to be recorded
5	Liaise with vessel Master re implementation of SOPEP
6	Determine initial response with Port Technical Officer
7	Oversee risk assessment for cleanup operations
8	Liaise with external contacts as per 3.1.2.
9	Determine the most effective response strategy
10	Inform General Manager if Tier 2 or 3 incident
11	Obtain data on likely quantities of liquid oily wastes being collected
12	Standdown Procedures

**Checklist 5 - Harbour Master Response Action Sheet**

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1	Decide when the spillage has been contained and is no longer a threat to the environment or other activities in the harbour.
2	Thoroughly check the cleanup site
3	Stand down the response teams and any shore operations
4	Organise return of response equipment
5	Compile Logs and prepare incident report
6	Arrange debriefing
7	Liaise with external contacts as per 3.1.2.
8	Determine the most effective response strategy
9	Inform General Manager if Tier 2 or 3 incident
10	Obtain data on likely quantities of liquid oily wastes being collected
11	Standdown Procedures

**Checklist 6 - Harbour Master Standdown Actions**

**3.3.6. Tiered Response Actions**

TIER ONE	
Small operational spills where events can be dealt with by onsite resources. A Tier 1 spill is not likely to require recourse to intervention by resources outside the Port, external incident response organisation or external authorities, except for purposes of notification.	
<b>Light Oils</b>	Light oils such as hydraulic oils or Gasoil will spread very quickly on the surface of the water and will evaporate and disperse readily. The response will be therefore to monitor and evaluate the spilled oil. If necessary sorbent materials can be used to recover oil where it may have collected in sufficient quantities. The rescue boat may be used to agitate the water and therefore aid natural dispersion of the oil may also be beneficial.
<b>Heavy Oils</b>	<p>Heavy fuel oil such as IFO 380 may spill during bunkering from a barge within the harbour. The primary response in this scenario would be to contain the oil between the vessels using fenders already deployed forward and aft between the vessels. Sorbent materials may then be used as a backup around the fenders.</p> <p>Once the oil is contained it will be recovered either by used of skimmers deployed from the bunker barge or, if the oil is too viscous through mechanical means. Depending on the quantity the oil will either be recovered mechanically from a small workboat, or it maybe necessary to use plant machinery either from aboard the bunker barge, or from the Linkspan.</p>



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	Both the vessel and the bunkering barge will remain in position acting to contain the oil, until the recovery operation has been completed.
<b>TIER TWO</b>	
Medium sized spills that will be handled by Port personnel and a nominated Contractor or other external assistance as nominated within this plan. A Tier 2 incident may require the establishment of a Response Centre in order to co-ordinate ongoing response.	
<b>TIER THREE</b>	
Larger spills or a loss of containment incident likely to spread outside the Port area that will require full involvement of other authorities and possible mobilisation of a tier 3 and national stockpiles.	

### 3.4. Health & Safety Assessment.

#### 3.4.1. Introduction

Rosslare Europort Health & Safety Policy is outlined in Annex 3A. Detailed policy and principles of managing safety are laid out in various Iarnród Eireann Company Safety Standards, the more relevant of which are enumerated below:

No	Title	Safety Standard
1	Policy & Principles for Training, Competency & Fitness	IE-SMS-004
2	Policy & Principles for Management of Safety Risk	IE-SMS-006
3	Policy & Principles for reporting and investigation of Accidents and Incidents	IE-SMS-007
4	Policy & Principles for Emergency Response	IE-SMS-012

#### 3.4.2. Site Health and Safety Assessment

It is the responsibility of the Port Technical Officer and the Harbour Master to assess all potential and ongoing site specific hazards to personnel involved in the response to a spillage, and which also might cause further damage to the environment. All personnel responding to the spillage must be briefed in the hazards and agree to the required control measures.

1	Other Vessel movements			
2	Weather & Tidal Conditions			
3	Rescue Boat Safety			
4	<b>Potential Site Hazards</b>			
	Birds?	Chemical?	Fire/Explosion?	Slips/Trips/Falls?
	Cold Stress?	Lifting?	Heat Stress?	Noise?
	Electrical?	Response Equipment?	Pumps & Hoses?	Fatigue?

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	<b>Working water?</b>	<b>near</b>			
5	<b>PPE</b>				
	Feet?	Head?	Eyes?	Overalls?	
	Lifejacket?	Hands?	Respirators?		
6	First Aid Boxes				
7	Decontamination Facility				

#### Checklist 7 – Site-specific Hazard Identification

### 3.5. Waste Disposal Operations

#### 3.5.1. General

All liquid Oil/HNS contaminated material is considered hazardous and is defined in the [European Waste Catalogue \(EWC\) and Hazardous Waste List - Valid from 1 January 2002](#). Oil contaminated sediment may be defined as Hazardous if concentrations exceed the threshold values for the hazardous properties.

The waste should, if necessary, be characterised by analysis to be certain that it is correctly classified with the appropriate six digit code. A guidance document for such classification and analysis can be found at:

<http://www.epa.ie/OurEnvironment/Waste/WasteClassificationandCharacterisation/pdfsformwc/FileUpload,6040,en.pdf>

<http://www.epa.ie/OurEnvironment/Waste/WasteClassificationandCharacterisation/pdfsformwc/FileUpload,6041,en.pdf>

Analysis may be required to establish:

- Identification of waste material
- Concentration of waste contamination by hazardous material.

Some Hazardous waste categories are 'mirror entries' within the EWC and their concentration may determine whether they have to be disposed of as Hazardous or non-hazardous waste.

#### 3.5.2. Current Legislation

The legislation relating to the safe storage, transport, treatment and disposal of recovered Oil/HNS material is outlined in Annex II:

Customers disposing of waste require full traceability from collection and storage to shipment and disposal/recovery.

#### 3.5.3. Description of types of waste and disposal

A Waste Management Strategy for Shoreline Clean-up, identifying potential sites for intermediate storage, temporary storage and permanent disposal, promoting waste minimisation and identifying waste licensing regulations.

- Arrangements for setting up a Waste Management Sub-Group in the Technical Team and its role in the response.

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- Identification of temporary storage sites.
- Identification of intermediate storage sites.
- Identification of a final disposal route.

#### **3.5.4. Temporary storage**

*Chart showing the different types of storage for liquids with comments and a chart for liquid/solid.  
2.5.3.1 - 2.5.3.5 List of different methods with comments*

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## 4. DATA DIRECTORY

### 4.1. Contacts

<b>EMERGENCY SERVICE CONTACTS</b>		
Ambulance Service	<b>T</b>	1800 499199
Customs	<b>M</b>	087 2418611
Irish Coastguard	<b>T</b>	01 6620922
RNLI	<b>M</b>	087 2418968
Wexford Fire Service	<b>T</b>	053 9176329
Wexford Garda	<b>T</b>	053 9165200

Table 14 - Emergency Service Contacts

<b>LOCAL OIL SPILL CONTACTS</b>		
Harbour Master	<b>M</b>	087 2598535
Port Technical Officer	<b>M</b>	087 2893202
Maintenance Foreman	<b>M</b>	087 2807187
Marine Officer, Wexford Co. Council	<b>M</b>	087 0507071
Harbour Master, Port of Waterford	<b>M</b>	087 2224961
Braemar Howells [L2]	<b>M</b>	+44 8700 73776673

Table 15 – Local Oil Spill Contacts

<b>WASTE OIL CONTACTS</b>		
Inver Energy	<b>M</b>	087 2654864
Enva Ireland Ltd	<b>T</b>	057 8678600
	<b>M</b>	087 2508018
Rilta Environmental Ltd.	<b>T</b>	01 4018000

Table 16 - Waste Oil Contacts

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TUG /WORKBOAT CONTACTS					
Name	Type	Based	Availability		
TRAMONTINE	17t BP Twin-screw	Waterford	12hrs	M	086 1727502
INGLEBY CROSS	13.8t BP Twin Voith-Schneider	Waterford	12hrs	M	086 8232739
HUSKY	10t BP Twin-screw Anchor Handling & Towing	Wicklow	8hrs	M	087 2898616
Irish Sea Contractors Ltd	Workboats/Mini Tugs	Rosslare	3hrs	M	087 2565271
Marine Specialists Ltd		Foulksmills	3hrs	M	087 2459632
Local Fishing Vessels	As per ISPS authorised list	Small Boat Harbour	1hr	As per Approved Fishing Vessel and Small Boat List	

Table 17 - Tugs/Workboat Contacts

## 4.2. Resources

### 4.2.1. Tier 1 – Immediate Mobilisation

Personnel	
As per Table 9	
Resources – Sorbent Resources	
80 feet	8 x 8" Sorbent boom
80 feet	16 x 5" Sorbent boom
400	Sorbent pads
150 meters	Sorbent roll
2	Pack of 50 oily waste bags and ties
1	Coil of 6mm polyprop rope
1	Oil Sample Kit
6	Full Personal Protective Equipment
1	Container

Table 18 - Tier 1 Resources

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#### 4.2.2. Tier 2 – Mobilised within 12 hours

Duty / Incident Manager
On Scene Commander
Environmental Specialist / Chemical Specialist
Response Team Leader
Responder Operator
Admin Co-ordinator

**Table 19 - Tier 2 Resources: Personnel (Oil/Fuel)**

Gas Tight Chemical Personal Protection Suit
Gas Tight Chemical Personal Protection Suit (Replacement Cost)
Splash Tight Chemical Personal Protection Suit Tyvek F (Replacement Cost)
Respirator (+filters at cost + 25%)
Respirator (powered)
Breathing Apparatus
Cylinder Use (each)
Other PPE replacement
Salvage Drums (each)
Decontamination Shower
Back Pack Sprayer
Chemical Transfer Pump 1.5"-2" SS / PVDF with PTFE
Chemical Transfer Pump 1" SS with PTFE
Chemical Transfer Hose per 5m length
Chemical Transfer Hose replacement
Air Compressor

**Table 20 – Tier 2 Resources: Chemical Response / Protection Equipment**

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PID
Draeger +tubes
Multi-Gas Detector

**Table 21 - Tier 2 Resources: Gas Detection Equipment**

Rope Mop 140
Rope Mop 240
2" Skimmers various
Power Vac System, head & hopper
3" Skimmers various
Komara 30k Disc Skimmer
Confined Space entry equipment including Gas Monitor

**Table 22 - Tier 2 Resources: Oil Spill Recovery Devices**

Small Containment Boom (inc. Ancillaries)
Large Containment Boom (inc. Ancillaries)

**Table 23 - Tier 2 Resources: Oil Spill Containment Equipment**

All pumps apart from chemical transfer
Diesel driven HP Washer
Electric driven HP Washer
Industrial Pressure Washer

**Table 24 - Tier 2 Resources: Pumps/Pressure Washers**

Viko Tank
Fastank, Liner, Roof & Rollover Pipe
Other Small Tanks
Oily water separator, portable unit

**Table 25 - Tier 2 Resources: Oil Spill Temporary Storage Tanks**

Hydraulic Power Pack with integral pump
Petrol Generator
Diesel Generator

**Table 26 - Tier 2 Resources: Power Supplies**

Inflatable workboat and motor (Sizes as available)
--

**Table 27: Tier 2 Resources – Boats**

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Standard Response Unit
Chemical Response Unit and/or 4x4 units
Manager response car
7.5t Flatbed Response Unit complete with HIAB crane
7.5t Box Van response unit
Trailer

**Table 28 - Tier 2 Resources: Vehicles**

#### **4.2.3. Tier 3 – National Response**

A response at this level will be available through the IRCG in accordance with the National Contingency Plan.

#### **4.3. Dispersants**

##### **4.3.1. Authorisation for the use of Dispersant**

The use of dispersants at Rosslare Europort is not permitted unless authorised and controlled by IRCG.

#### **4.4. Oil Spill Modelling**

Not applicable for Rosslare Europort.

#### **4.5. Surveillance and Tracking**

##### **4.5.1. Spill Surveillance**

Daylight surveillance of the spill within Harbour Limits may be achieved by visual observations taken aboard a ship or from ashore. Small boats may also assist. The aim of the surveillance is to establish the direction of movement of the oil and the size of the area affected. Night time surveillance may also be best achieved by aerial surveillance organised by IRCG.

##### **4.5.2. Quantification of Spillage**

1	Volume of Oil lost from Pipework
2	Rate of Spill – refer to Table 6
3	Oil in Hose
4	Volume of Oil lost from storage tanks
5	Duration of Spill
6	Pumping Rate

**Checklist 8 - Quantification of Oil Spill Volume**

##### **4.5.3. Recommended Overflight Pattern**

Not applicable to this plan - Overflying Rosslare Europort [see Figure 1] achieves full cover of the area just to the north and east of the Harbour.



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#### 4.5.4. Appearance by Colour

The Bonn Agreement Pollution Observation Log provides a method of estimating the spillage quantity from the appearance Of Oil At Sea.

1	Calculate the area of coverage in km <sup>2</sup> or m <sup>2</sup> by flying / steaming along the length and breadth of the spillage.
2	Determine the appearance of the oil (i.e. Silvery, Blue, Rainbow etc.) as described below.
3	Calculate the % coverage of oil appearance and multiply this by the total area affected.
4	Multiply the total area affected by its colour code quantity to determine the total tonnes spilt.

Code	Oil Appearance / Colour	Quantity (Tonnes / km <sup>2</sup> )
1	Silvery	0.02
2	Grey	0.1
3	Rainbow	0.3
4	Blue	1
5	Blue / Brown	5
6	Brown / Black	15
7	Dark Brown / Black	> 25

#### EXAMPLE

The total area of coverage is estimated as 5km x 5km	$5 \times 5 = 25\text{km}^2$
The area within covered by oil is estimated to be about 80%.	$25 \times .8 = 20\text{km}^2$
Area Covered by Blue Oil is estimated as 30%	$20 \times .3 \times 1 = 6 \text{ tonnes}$
Area Covered by Rainbow Oil is estimated as 70%	$20 \times .7 \times .3 = 4.2 \text{ tonnes}$
<b>Total estimated spillage</b>	<b>10.2 tonnes</b>

Table 29- Estimating quantity of spillage from the appearance on water.

#### 4.5.5. Aerial Surveillance Observer Log

Not applicable to this plan.

#### 4.6. The Sampling, Transport and Storage of Oil Samples

Three samples of the spillage should be collected as soon as possible before the oil has weathered and distributed to:

- IRCG
- A representative of the source of the pollution
- Retained by Harbour Master for legal purposes

Where it is apparent that the source of pollution is a vessel, then a sample should be obtained therefrom. Where the pollution extends beyond the harbour limits, it is probable that WCC will also collect samples daily per 1km shoreline.

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Step	Action	Note	
1	Take the sample in a clean glass container as provided in the spill sampling kit	Metal or plastic containers should be avoided since they may interfere with subsequent fingerprinting.	
2	Sample the oil only – minimise contamination by solid matter	As per sampling kit	
3	Sample as per the following sizes	10mL	Unweathered oils that are liquid and substantially free of water
		100mL	Oil exposed to the sea's surface and forming an emulsion "chocolate mousse".
		1L of discharge	Illegal overside water discharge
		20g	Tarry lumps, as found on beaches
4	Carefully store samples	Samples should be sealed to prevent tampering – wire with lead and wax sealant - adhesive labels. All samples, once bottled, should be placed in plastic bags and sealed. Ensure jars are stored in a cool (5°C) dark area.	
5	Label or accompanying documentation should contain the following information.		
	<ul style="list-style-type: none"> <li>• An identity number detailing:- year 2 digits, month 2 digits, day 2 digits and the initials of the official in charge of taking samples.</li> <li>• Description of samples (e.g.:- texture, colour, possible contaminants).</li> <li>• Place from where sample was taken.</li> <li>• Date and time of sampling.</li> <li>• Purpose for which sample was taken.</li> <li>• Source if known or suspected.</li> <li>• Whether or not dispersants have been used, type and make.</li> <li>• Method of sampling.</li> <li>• Name, address and telephone number of person taking samples and witnesses to sampling.</li> <li>• Wind direction and speed.</li> <li>• Air and water temperature.</li> <li>• Description of the oil (e.g.:- distribution, consistency).</li> </ul>		

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Checklist 9 - Taking Samples

**4.7. Checklists and Procedures**

**4.7.1. Oil/HNS Spill Response Management**

See Section 3.3

**4.7.2. Response Centre**

**4.7.3. Arrangements when setting up a Response Centre**

**4.7.4. Principal Equipment needed for Coastal Spill Control**

**4.7.5. What to order for Coastal Clean-up operations**

**4.7.6. Spill Control Team**

**4.7.7. Assessment of Oil/HNS on shoreline**

**4.7.8. Procedure for dealing with contaminated Birds**

The general procedure would be to contact NPWS who in turn would refer to the organisations enclosed in Flow Diagram for advice and assistance.

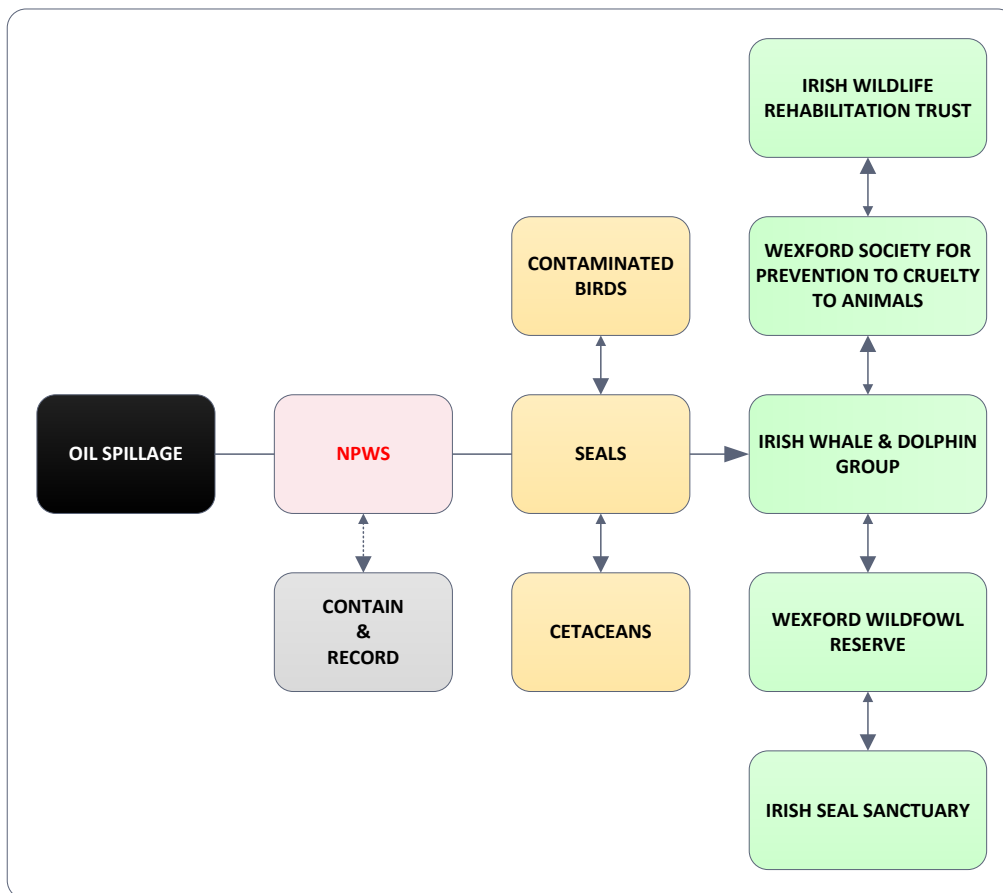


Figure 12 - Wildlife Protection Organisations

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#### 4.7.9. Termination of Operations




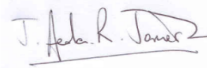
The Harbour Master is responsible for carrying out the following actions subsequent to the cleanup being completed.

1	As per Checklist 6
2	Arrange for debriefing within 14 days of end of event
3	Incident investigation Report using procedures compliant with IE-SMS-007
4	Amendments to existing OSR Plan following incident investigation and debriefing to be inserted

#### Checklist 10 - Termination of Operations

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## Appendix I – Rosslare Europort Health & Safety Policy

	<b>PORT HEALTH &amp; SAFETY POLICY</b>
<p><b>FOREWORD</b></p> <p>To compete successfully Iarnród Éireann must continually strive for excellence in safety, quality and productivity. They must go hand in hand, for they support each other. As a matter of fact, one without the other is inconsistent with my belief that the right way to do the job includes all three.</p> <p>Safety is about having objectives and processes in place with competent people able to pursue them. Safety is about people performing procedures properly and keeping them under constant review.</p> <p>As we move through a time of change, it is essential that we all work together to ensure that our procedures and management systems allow the people involved to operate safely.</p> <p>Port Users, our staff and contractors – and our business success depend on this.</p> <p>Ensuring the safe operation of the business is the top priority of everybody at Rosslare Europort.</p> <p style="text-align: center;">   <b>David Franks</b>  <b>Chief Executive Officer</b>  <b>Iarnród Éireann</b> </p> <p style="text-align: right;">6<sup>th</sup> February 2013</p> <p><b>DUTIES OF EMPLOYEES AND CONTRACTORS</b></p> <p>In addition to your obligations under the Company Rules and Regulations. You must comply with the following duties under the Safety, Health and Welfare at Work Act 2005.</p> <p><b>TAKE CARE</b></p> <p><b>ALWAYS</b> take reasonable care of your own safety, health and welfare and that of others who may be affected by your acts or omissions at work.</p> <p><b>COOPERATE</b></p> <p><b>ALWAYS</b> co-operate with management and others to enable them to comply with the requirement of the law.</p> <p><b>USE PERSONAL PROTECTION</b></p> <p><b>ALWAYS</b> use protective clothing, appliances and equipment provided for securing your health, safety and welfare in such a manner as to provide the protection intended.</p> <p><b>ATTEND TRAINING</b></p> <p><b>ALWAYS</b> attend appropriate training and undergo assessment when directed by your Supervisors.</p> <p><b>REPORT DEFECTS AND ACCIDENTS</b></p> <p><b>ALWAYS</b> report to your supervisors, without delay, any defect you may become aware of in plant, equipment, place of work or system of work, which might endanger safety, health or welfare.</p> <p><b>ALWAYS</b> report accidents and “near miss” incidents.</p> <p><b>NEVER INTERFERE WITH SAFETY MEASURES</b></p> <p><b>NEVER</b> intentionally or recklessly interfere with or misuse anything provided for securing the safety, health or welfare of persons arising out of work activities.</p> <p><b>NEVER BE UNDER THE INFLUENCE OF DRINK OR DRUGS AT WORK</b></p> <p><b>REPORT ALL INJURIES / ILLNESSES</b></p> <p><b>ALWAYS</b> report injuries and illnesses to your first-aider, supervisor, panel doctor or Chief Medical Officer.</p>	<p><b>OBJECTIVES</b></p> <ul style="list-style-type: none"> <li>• It is the policy of Iarnród Éireann in conducting all of its marine and land-based activities at Rosslare Europort that the protection of the safety, security, health &amp; welfare of staff and all those who work at, visit or travel through the Europort, along with the protection of the environment will be given the highest priority. It is Company Policy to comply with all applicable laws and regulations.</li> <li>• The Company actively seeks the cooperation of other employers with businesses in the Europort to achieve compliance with national and EU Safety, Security and Environmental Protection legislation.</li> <li>• By implementing this policy, Rosslare Europort management seeks to ensure that: <ul style="list-style-type: none"> <li>a) All safety hazards are identified by risk assessment and risks eliminated or mitigated where possible and adequately controlled. Risk assessments will be reviewed annually and must be revised earlier if circumstances or conditions change.</li> <li>b) All employees are competent, informed, instructed and adequately trained in health and safety matters and are provided with an appropriate level of supervision.</li> <li>c) Effective consultation and communication channels exist between port management, staff and port users to secure co-operation in maintaining, reviewing and improving safety.</li> <li>d) Where any member of staff is in good faith concerned about a matter of Health &amp; Safety, he/she is encouraged to raise it and can do so without fear or recrimination.</li> <li>e) All structures, plant, vessels, equipment, materials and substances are procured/designed to meet or exceed relevant safety standards and are maintained to secure high levels of safety.</li> <li>f) All Marine Operations comply with the Port Marine Safety Code.</li> <li>g) All accidents, safety occurrences and incidents are investigated</li> <li>h) The safety management system is monitored, reviewed, benchmarked and audited on a periodic basis.</li> <li>i) The Europort complies with the International Ship &amp; Port Facility Security Code and the EU Security Directive in an efficient and effective manner.</li> <li>j) All necessary arrangements are made to protect the marine and terminal environment.</li> <li>k) This safety policy will be reviewed each year and annual reports on the Port’s safety performance will be published.</li> <li>l) All management and Board meetings consider safety at every meeting.</li> </ul> </li> </ul> <p>This Policy and the arrangements for its implementation will be brought to the attention of all employees and will be kept under review.</p> <p>i. <b>I endorse the Company Safety and Loss Control Policy.</b></p> <p>ii. <b>I accept overall responsibility for the Safety, Health and Welfare of persons affected by activities within Rosslare Europort.</b></p> <p>iii. <b>Where appropriate I am delegating responsibility for implementing these arrangements to my management team.</b></p> <p style="text-align: center;">   <b>John P Lynch</b>  <b>General Manager</b>  <b>6<sup>th</sup> Feb 2013</b> </p> <p style="text-align: center;">   <b>Capt. Aedan Jameson</b>  <b>Harbour Master</b>  <b>6<sup>th</sup> Feb 2013</b> </p>

The Safety Statement and Safety Manuals are available to be read at: OFFICE OF THE HARBOUR MASTER



Capt. Aedan Jameson  
Operations Manager  
Harbour Master

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## Appendix II – Waste Legislation

Source	Title
EU	Waste Framework Directive 2006/12/EC
	Landfill Directive 1999/31/EC
	Waste Incineration Directive 2000/76/EC
Irish	Waste Management Acts 1996 to 2005
	Protection of the Environment Act 2003 <i>No 27 of 2003</i>
<p>The Waste Management Acts, are the main statute from which all other regulations on packaging, litter, hazardous waste, trans-frontier movement of hazardous waste, waste collection, as well as regulations on the licensing and permitting of facilities, derive.</p>	
<p><b>Regulations under the Waste Management Act, 1996 (No.10 of 1996)</b></p>	
<p><b>Waste Management (Licensing) Regulations, 1997 (S.I. No. 133 of 1997).</b></p>	<p>These Regulations provided for the commencement and operation of the system of waste licensing by the EPA, in accordance with Part V of the 1996 Act.</p>
<p><b>Waste Management (Planning) Regulations, 1997 (S.I. No. 137 of 1997)</b></p>	<p>These Regulations specify matters to be addressed in local authority waste management plans.</p>
<p><b>European Communities (Licensing of Incinerators of Hazardous Waste) Regulations, 1998 (S.I. No. 64 of 1998).</b></p>	<p>These Regulations implement EU Council Directive 94/67/EC on the incineration of hazardous waste.</p>
<p><b>Waste Management (Amendment of Waste Management Act, 1996) Regulations, 1998 (S.I. No. 146 of 1998).</b></p>	<p>These Regulations amend the scope of section 51(2) of the 1996 Act, concerning the recovery of sludges and agricultural waste.</p>
<p><b>Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998).</b></p>	<p>These Regulations provide for a system of consignment notes in respect of the movement of hazardous waste within the State and transpose certain related EU requirements into Irish legislation.</p>
<p><b>Waste Management (Transfrontier Shipments of Waste) Regulations,</b></p>	<p>These replace 1994 Regulations made for the purposes of giving effect to Council Regulation (EEC)</p>

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<b>1998 (S.I. No. 149 of 1998).</b>	No. 259/93 on the supervision and control of shipments of waste within, into and out of the European Community, and provide for certain administrative details, in particular relating to enforcement.
<b>Waste Management (Licensing) (Amendment) Regulations, 1998 (S.I. No. 162 of 1998).</b>	These Regulations prescribe the day on or after which further specified classes of waste recovery and disposal activity require an EPA waste licence, and provide for related amendments of the Waste Management (Licensing) Regulations, 1997.
<b>Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998).</b>	These Regulations update and replace a number of previous Regulations, and implement provisions of several EU directives relating to asbestos waste, batteries and accumulators, polychlorinated biphenyls (PCBs), waste oils and hazardous wastes generally.
Waste Management (Miscellaneous Provisions) Regulations, 1998 (S.I. No. 164 of 1998).	These Regulations provide for the permitting by local authorities of waste oil collection, and other miscellaneous matters.
Waste Management (Permit) Regulations, 1998 (S.I. No. 165 of 1998).	These Regulations provide for the granting of waste permits by local authorities in respect of specified waste recovery and disposal activities. Permits are issued by Local Authorities for recycling and waste disposal companies which take in and/or process waste on their sites, up to a quantity of 5000 tonnes per annum. Waste Permits are required by law for such facilities under these regulations.
Waste Management (Permit) Regulations, 1998 (S.I. No. 165 of 1998).	These Regulations provide for the granting of waste permits by local authorities in respect of specified waste recovery and disposal activities. Permits are issued by Local Authorities for recycling and waste disposal companies which take in and/or process waste on their sites, up to a quantity of 5000 tonnes per annum. Waste Permits are required by law for such facilities under these regulations.
Waste Management (Permit) Regulations, 1998 (S.I. No. 165 of 1998).	These Regulations provide for the granting of waste permits by local authorities in respect of specified waste recovery and disposal activities. Permits are issued by Local Authorities for recycling and waste disposal companies which take in and/or process

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	waste on their sites, up to a quantity of 5000 tonnes per annum. Waste Permits are required by law for such facilities under these regulations.
Waste Management (Permit) Regulations, 1998 (S.I. No. 165 of 1998).	These Regulations provide for the granting of waste permits by local authorities in respect of specified waste recovery and disposal activities. Permits are issued by Local Authorities for recycling and waste disposal companies which take in and/or process waste on their sites, up to a quantity of 5000 tonnes per annum. Waste Permits are required by law for such facilities under these regulations.
European Communities (Amendment of Waste Management Act, 1996) Regulations, 1998 (S.I. No. 166 of 1998).	These Regulations amend certain provisions of the 1996 Act for the purpose of enabling full effect.
Waste Management (Licensing) Regulations, 2000 (S.I. No. 185 of 2000)	The Regulations consolidate the 1997 and 1998 Regulations, with a number of minor technical amendments, but also provide specifically for the licensing of mobile waste treatment plant to operate at more than one location.
Waste Management (Prescribed Date) Regulations, 2001 (S.I. No. 390 of 2001)	These Regulations provide that 14 September 2001 is the prescribed date by which a waste management plan under section 22 of the Waste Management Act, 1996 must be made.
Waste Management (Licensing)(Amendment) Regulations, 2001 (S.I. No. 397 of 2001)	These Regulations amend Article 23(1) of the Waste Management (Licensing) Regulations, 2000 (S.I. No. 185 of 2000). They provide that an application for the grant or review of a waste licence may be withdrawn only where the said application concerns a proposed waste activity.
Waste Management (Collection Permit) Regulations, 2001 (S.I. No. 402 of 2001)	These Regulations prescribe that on or after 30 November 2001, the collection of waste on a commercial basis requires a waste collection permit from a relevant local authority in accordance with section 34(1) of the Act. The Regulations set out procedures for the making of permit applications, public consultation, consideration by local authorities of submissions in relation to permit applications, and the grant, refusal and review of permits by local authorities. Certain waste



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	collection activities that are subject to controls under other legislation are exempt from the permitting requirement.
Waste Management (Licensing) Regulations (2004) S.I. No. 395 of 2004.	Licences are issued to larger waste disposal facilities and/or hazardous waste facilities. Examples of facilities which require a waste licence are landfill sites, large industrial waste services that manage waste defined as large solid waste transfer stations, and hazardous waste transfer stations/recovery installations.