

**ATTACHMENT E: STAGE 1 – SCREENING FOR
APPROPRIATE ASSESSMENT**



Celtic Interconnector

Screening for Appropriate Assessment - 2018 Geotechnical & Environmental Marine Survey

In support of foreshore licence application FS006811 for geotechnical & environmental survey works

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GLOSSARY

Annex I habitat: A habitat listed in Annex I of the Habitats Directive.

Appropriate Assessment: An assessment carried out under Article 6(3) of the Habitats Directive of the implications of a plan or project, either individually or in combination with other plans and projects, on a Natura 2000 site in view of the site's conservation objectives.

Biodiversity: The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (UN Convention on Biological Diversity 1992).

Birds Directive: Council Directive 79/409/EEC on the conservation of wild birds.

European Commission: The Commission of the European Communities.

Ex situ: Outside – usually in the context of *ex situ* effects (or outside effects) on a Natura 2000 site. For example, abstraction of water from a river upstream of a Natura 2000 site located on the river could have an *ex situ* effect on the site.

Habitats Directive: Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive).

In situ: Inside or within – usually in the context of *in situ* effects (or effects within) on a Natura 2000 site. For example, constructing a marina on the lakeshore in a Natura 2000 site could have an *in situ* effect.

Natura 2000: Network of Special Areas of Conservation and Special Protection Areas. For the purposes of this guidance, it includes candidate SACs and notified SPAs.

Natura Impact Statement (NIS): The report of a scientific examination of a 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, to enable a consent authority to carry out an appropriate assessment.

Precautionary principle: A principle underlying the concept of sustainable development which implies that prudent action be taken to protect the environment even in the absence of scientific certainty.

Priority habitat: Natural habitat types on Annex I of the Habitats Directive, and indicated by an asterisk (*), which are in danger of disappearance, and for which the Community has particular responsibility in view of the proportion of their natural range which falls within the territory.

Priority species: Species for the conservation of which the Community has particular responsibility in view of the proportion of their natural range which falls within the territory, these priority species are indicated by an asterisk (*) in Annex II of the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. At present, Ireland does not have any priority species.

Screening for appropriate assessment: The screening of a plan or project to establish if an appropriate assessment of the plan or project is required. Unless the screening assessment can establish that there is no likelihood of any significant effect on a Natura 2000 site, then an AA must be carried out.

Special Areas of Conservation (SACs): Are sites designated under European Communities Directive 92/43/EEC known as the 'Habitats Directive'. This requires the conservation of important, rare or threatened habitats and species (not birds, which are protected by Special Protection Areas) across Europe.

Special Protection Areas (SPAs): Are sites designated under the European Communities Directive 79/409/EEC, known as the 'Birds Directive', to conserve the habitats of certain migratory or rare birds.

1 INTRODUCTION

1.1 BACKGROUND

EirGrid and RTE are investigating the feasibility of installing a power cable interconnector between Ireland and France. The project would include two High Voltage Direct Current (HVDC) converter stations, a 700+MW HVDC submarine interconnector between the converter stations and onshore lines/cables as appropriate.

In 2014 and 2015, EirGrid and RTE carried out geophysical and geotechnical marine surveys of possible marine cable routes under Foreshore Licences FS 006243 and FS 006446. EirGrid and RTE now intend to carry out further marine surveys of the nearshore approaches in order to assist in the refinement of marine routing for the proposed project. To this end, two new route corridor branches have been identified for marine survey. The geophysical survey was undertaken in October 2017 under Foreshore Licence FS 006722 with further geotechnical and environmental surveys to be undertaken in 2018.

The surveys are intended to aid the design and routing of HVDC cables by providing a baseline description of the seabed environment along the proposed cable route corridors. The data will be used to inform environmental reports by providing information on the current situation and allowing impacts to be predicted, and subsequently appropriate mitigation to be developed. It may also be used at a later date to provide a baseline against which to monitor post-construction effects of construction/operation/decommissioning.

EirGrid are applying for a Foreshore Licence to undertake a geotechnical and a benthic environment survey in 2018. This Screening Report for Appropriate Assessment has been prepared in respect of geotechnical and environmental surveys to be undertaken in 2018 along these newly identified possible routes alone, and in combination with other plans and projects to determine any likely significant impacts on the Natura 2000 Network of sites.

This report is an update of the previous Screening Report for Appropriate Assessment prepared by Intertek, Energy and Water Consultancy Services for FS 006446 (*Report Reference P1812_RN3526_REV1_Attachment E*).

1.2 PURPOSE OF SCREENING FOR - APPROPRIATE ASSESSMENT

In accordance with the provisions of Article 6(3) of the EU Habitats Directive and the Irish Habitat Regulations (2011), Screening for Appropriate Assessment (AA) is required to consider the possible impacts of the geotechnical survey on relevant Natura 2000 sites. Natura 2000 Sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). This report presents the findings of this assessment in support of the Foreshore Licence Application and has been based on the following documents:

- The Department of Environment, Heritage and Local Government (DoEHLG) Guidance “Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, 10 December 2009.”
- The European Commission Guidance “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, November 2001”.

- The Department of Arts, Heritage and the Gaeltacht “Marine Natura Impact Statements in Irish Special Areas of Conservation: A Working Document, April 2012.”

The purpose of Screening for AA is specifically to consider whether the proposed geotechnical and benthic environment survey is likely to have any **significant** impacts either alone or in combination with other projects, on any Natura 2000 sites in view of their conservation objectives. If it is clear there will be no significant impacts then AA will not be required. If significant impacts are considered likely then an AA would need to be undertaken to consider the impacts on the integrity of the Natura 2000 sites of the geotechnical survey either alone or in combination with other projects in view of their conservation objectives. Please see Appendix A for further details of the legislative context of AA Screening in Ireland.

1.3 SCOPE OF AA SCREENING REPORT

This screening report is for the 2018 geotechnical and environmental survey works.

This report updates the information and assessment of the previous Screening Report for AA that was prepared by Intertek for Foreshore License 006446 (Report Reference P1812_RN3526_REV1_Attachment E).

Given the presence of challenging geology on both the Irish and French nearshore approaches, there is a benefit in carrying out further marine surveys of the nearshore approaches in order to assist in the refinement of marine routing for the proposed project. EirGrid and RTE seek to investigate two possible routes that are within the same general study area as the previous marine surveys.

The survey route corridors have been altered by approx. 10-15km in places however, proposed marine survey methodology remains exactly the same as those previously undertaken and for which foreshore licences were granted.

The geotechnical and environmental survey area to be investigated is located to the south-east of County Cork (Figure 1-1). The landfall options to be surveyed are:

- Ballinwilling Strand, Ballycotton Bay - with an off shore approach further west than the previous route surveyed (previous Foreshore License application area)
- Redbarn Beach and Claycastle Beach, Youghal Bay - these two possible landfall options have been identified along a route east of the Ballinwilling approach

The geotechnical and environmental survey will be carried out seaward of Ballinwilling Strand, Redbarn Beach and Claycastle Beach.

It is important to note that the foreshore licence application area is slightly wider than the proposed survey corridor at the land/intertidal end (500m wide,

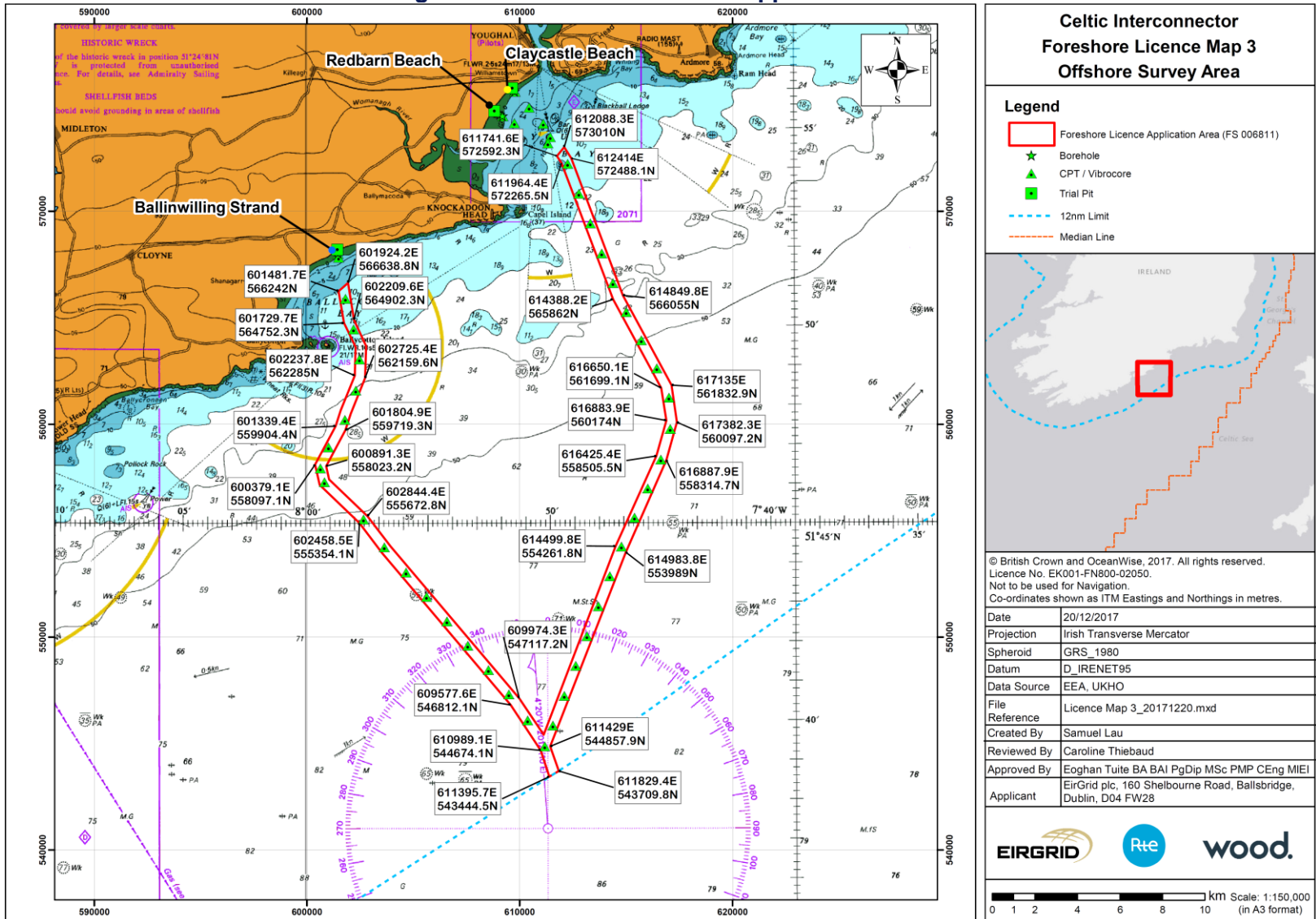
compared to the 250m wide survey corridor). This is to allow for flexibility within this area to identify the final intertidal survey corridor location (see Figure 1-1).

Therefore the geographical scope of this screening assessment covers the slightly larger foreshore licence application area, herein referred to as the survey area. For full details of the proposed application area and survey corridors see the Foreshore Application and Attachment B.

This report includes the following components:

- Description of the proposed geotechnical survey and benthic environment survey.
- Identification of relevant Natura 2000 sites including compilation of information on the qualifying interests and conservation objectives.
- An assessment of likely effects including identification of potential impacts on relevant Natura 2000 sites and assessment of significance.
- Screening Statement with conclusions.

Figure 1-1: Foreshore Licence Application Area



2 DESCRIPTION OF PROPOSED SURVEY WORKS

2.1 LOCATION OF GEOTECHNICAL AND ENVIRONMENTAL SURVEYS

The geotechnical and benthic environmental survey corridor will be nominally 250m wide for the intertidal and shallow water survey works (approximately the first 0.17 km from Ballinwilling and 0.2-0.3 km from Redbarn and Claycastle Beaches) within a 500m wide application area; and 500m wide for the offshore survey works (full width of the 500m application area). The total length of the survey area (two survey corridors out to intersection with previous marine survey extent near 12nm limit) is approximately 65.84km.

Data acquisition and coverage requirements are divided according to the following types of survey:

- Intertidal survey: from high water mark (HWM) to the charted low water mark (LWM) of each shore landing.
- Shallow water survey: from LWM seawards to the first 10m LAT (Lowest Astronomical Tide) water depth.
- Offshore survey: Seawards of the first 10m LAT water depth to 12nm limit.

2.2 GEOTECHNICAL SURVEY METHODOLOGY

The proposed additional surveys are identical in scope and methodology to those previously undertaken in 2015 under FS 006446. The purpose of the geotechnical survey is to evaluate the nature and mechanical properties of the superficial seabed sediments and inter-tidal sediments along the survey corridor. These surveys follow on from the interpretation of data collected during geophysical survey of the same survey corridor which was carried out in October 2017 (FS006722).

The geotechnical survey will consist of the following components:

- 1) Boreholes/Trial Pits at the landfalls
- 2) Vibrocores
- 3) Cone Penetrometer Testing (CPT)
- 4) Rock Coring (Optional)

Table 2-1: Summary of Geotechnical requirements for Irish Waters to the 12nm Limit

Survey Area	Geotechnical Sampling Methods
Land/Intertidal	Boreholes – approximately 3 boreholes at each landfall Trial Pits – approximately 3 trial pits at each landfall
Shallow Water Survey	Vibrocores and CPTs – 3 sites, approximately 7 vibrocores and 7 CPTs
Offshore Survey	Vibrocores and CPTs – average spacing of each sample type 1.5km. Approximately 39 vibrocores and 39 CPTs

2.2.1 Boreholes/Trial Pits (Land/Intertidal survey area)

Boreholes and Trial Pits will be required at each of the three landfalls in the land/inter-tidal survey area to assess thermal resistivity. Approximately 9 boreholes (3 at each landfall nominally with 100m spacing) and 9 trial pits (3 at each landfall) will be required in Ireland.

Boreholes will be drilled within the inter-tidal zone to a maximum depth of twenty (20) metres below current surface. The equipment to be used will include the following or similar:

- Bore hole - MI6 Massenza Drilling Rig / Pagani TG 63-200 Penetrometer.
- Trial Pit - Backhoe loader, JCB 3CX or 4CX.
- The Backhoe loader, MI6 Massenza drilling rig and Pagani TG 63-200 are approximately 5.5m x 2.25m, 3m x 1m and 2.3m x 1.1m respectively. All pieces of equipment would be driven onto the beach via public access points.

2.2.2 Marine Vibrocorer (Shallow water & Offshore Survey areas)

A standard vibrocorer will be used to take samples to a depth of 5m with a nominal core diameter of 75mm. Vibrocore sampling will consist of a sample barrel being vibrated into the ground to recover a sample. A motor sits on top of the barrel which generates a centrifugal force to vibrate the barrel. An illustrative example of a typical vibrocorer unit is given in Figure 2-1 below.

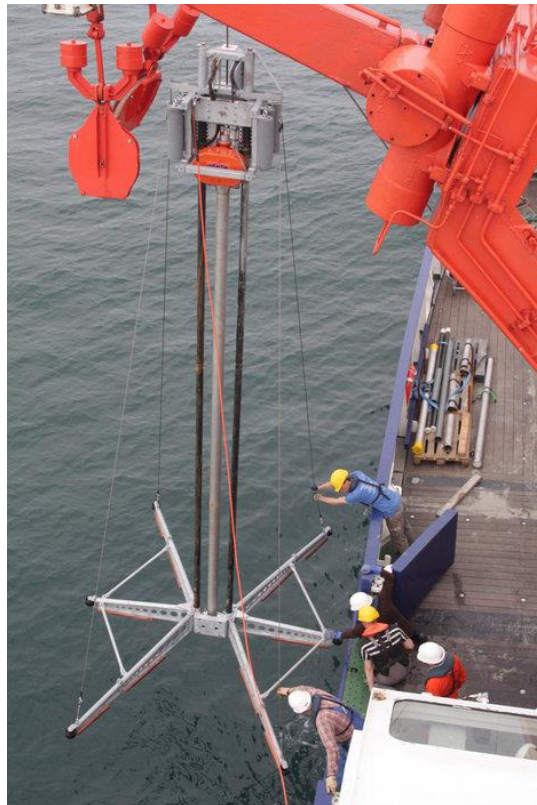


Figure 2-1 - Example of a typical vibrocorer unit

2.2.3 CPT (Shallow Water & Offshore Survey Area)

The Piezocone penetrometer for CPT will have a minimum 5 tonne capability and a maximum depth penetration of 5m below seabed. The CPT is undertaken by pushing an instrumented cone into the ground at a constant speed, with continuous measurement of the cone end resistance, the friction along the sleeve of the cone, and the pore water pressure. An illustrative example of a typical CPT unit is given in Figure 2-2 below.

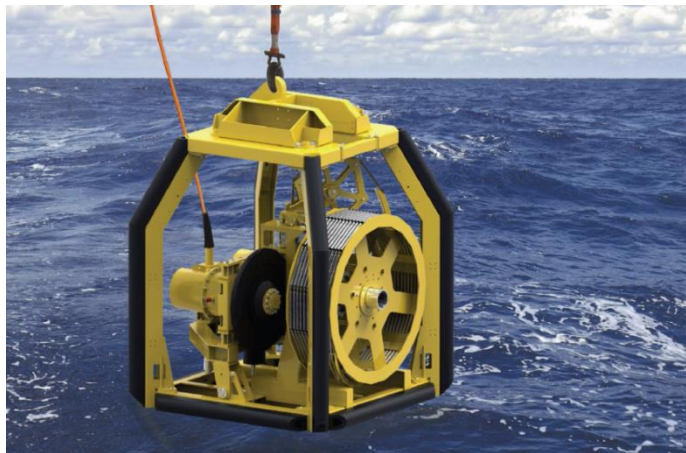


Figure 2-2 - Example of a typical CPT unit

2.2.4 Rock Coring (Shallow water & Offshore Survey areas)

In the event of a failure to achieve sample recovery using the CPT and/or Vibrocore methodology at the planned survey locations, a rock corer may be deployed in order to recover samples. Rock Coring would be performed by way of a drilling rig (MI6 Massenza) mounted on a jack-up in shallow water areas. In offshore waters a compensated drilling rig or seabed drilling rig would be used. Both sets of equipment would be capable of recovering samples up to 5m in depth with a nominal core diameter of 60.3mm. An illustrative example of a typical seabed drilling rig and of a compensated drilling rig is given in Figure 2-3 below.



Figure 2-3 - Example of a typical offshore drilling unit

2.3 ENVIRONMENTAL SURVEY METHODOLOGY

The aim of the environmental benthic survey is to map the distribution and extent of marine benthic habitats from the interpretation of the geophysical survey for the cable route (carried out in October 2017). This will comprise a benthic sampling programme and video or still photographs based upon interpretation of the geophysical data. The sampling locations will be determined based on the physical characteristics of the seabed.

Additional sediment samples may be acquired for later chemical analysis to determine the concentration of potential sediment contaminants.

The final scope of the environmental survey is dependent upon the diversity of benthic habitats. The programme and base scope is based upon site intervals given below.

- Land/intertidal: beach inspection and survey at each shore.
- Shallow water: Use of grab sampling and still or video camera.
- Offshore: Sampling intervals will be nominally every 15-20km. Use of grab sampling and still or video camera as required.

The grab will be used for collection of sediment samples for analysis of benthic infauna, particle size, total organic carbon and anthropogenic contaminants.

At each station up to two grab samples (sample volume approximately 0.1m³) will be required.

- One sample will be used for faunal analysis.
- Identification and quantitative analysis of benthic fauna – colonial and epifaunal species will be recorded qualitatively
- One sample will be used at locations where chemical and sediment analysis is required.
- Particle size analysis and distribution
- Sediment organic matter and carbon analysis
- Major trace element analysis
- Hydrocarbon analysis

Grabs are required to be more than 5cm in depth of sample and sampling to achieve this will be repeated for up to three attempts.

2.4 SURVEY SCHEDULE

The geotechnical and benthic environmental survey works are planned to commence in May 2018 and last approximately 30 days. A contingency period will be required to allow for operational delays.

3 IDENTIFICATION OF RELEVANT NATURA 2000 SITES

3.1 DESCRIPTION OF RECEIVING ENVIRONMENT

The proposed survey areas are located off the coast of Ballinwilling Strand, Ballycotton Bay and Redbarn and Claycastle Beach, Youghal Bay, County Cork. The survey works for which the foreshore licence application applies extend between the HWM and the 12nm limit where water depths reach approximately 80m.

3.1.1 Seabirds

This section of coastline is important to a large number of marine birds which is reflected by the number of sites designated as SPAs. Ballymacoda Bay SPA is adjacent to the Redbarn Beach landfall survey area and Ballycotton Bay SPA is 1.25km from the Ballinwilling landfall survey area.

Habitats commonly found along the south coast of Ireland include estuaries, mudflats and sand flats which are particularly important for seabirds. These habitats provide feeding and roosting grounds for all native and many visiting waders and are of major importance for migrant waterfowl in spring and autumn. Ireland lies on the main migratory routes of the east Atlantic with many of the birds that winter in southern Europe and Africa passing through and staging along the coast.

Some exposed and inaccessible parts of the south coast of Ireland also provide the perfect habitat for many breeding seabirds. There is an important sea breeding colony on the Saltee Islands, with smaller breeding sites also present all along the south coast where suitable habitats occur.

Irish coastal and offshore waters also provide local breeding and non-breeding seabirds, along with pelagic and passage migrants, with a rich source of nutrition particularly near coastal upwelling and frontal systems e.g. at Cape Clear, off the south west tip of Ireland. The waters off the south coast are also important fishing grounds and important nursery and spawning areas for fish and invertebrate species. As a result they are areas of concentration for foraging seabirds (DCENR, 2011).

3.1.2 Marine Mammals

3.1.2.1 **Cetaceans**

Irish waters are some of the most important in Europe for a wide range of cetacean species (whales, dolphins and porpoise). A total of 24 cetacean species have been recorded in Irish waters and breeding has been confirmed for a number of species including the Annex II species harbour porpoise (*Phocoena phocoena*) and bottlenose dolphin (*Tursiops truncatus*). The harbour porpoise is the most abundant cetacean species present in Irish waters (DCENR 2011). There are no SACs within 50km of the survey area designated for cetaceans. However individuals from designated sites further afield may be

present in the survey area. For example bottlenose dolphin that use the West Connacht Coast cSAC, off Connemara, western Ireland, have been shown by the Irish Whale and Dolphin Group to be also found off all Irish coasts including between Cork and Antrim (IWDG 2012).

3.1.2.2 Pinnipeds (Seals)

Ireland has two species of seal which are resident and native to Irish waters, the grey seal (*Halichoerus grypus*) and harbour (or common) seal (*Phoca vitulina*), both of which are Annex II species. Both species have terrestrial colonies (haul-outs) along all coastlines of Ireland. Whilst they haul out on land for key stages of their life history, the majority of their time is spent in the marine environment.

The harbour seal is found all around the coast of Ireland although the greatest numbers are found along the western coast, predominantly in sheltered areas such as estuaries and sand or mudflats. Most harbour seals come ashore during June to give birth and mate again and during July and August to moult (NPWS 2014). Therefore whilst it is possible that harbour seals could be present in the survey area, during the planned operation period most are likely to be ashore.

The grey seal occurs in greatest numbers off the west coast of Ireland, although significant numbers also occur on the east and southeast coasts. The grey seal generally breeds in Irish waters from September to December on remote and generally undisturbed areas, in particular offshore islands. Moulting occurs in the spring months during which the seals spend most the time ashore. Grey seals may therefore be present in the water in the survey area during the planned operational period.

There are no SACs designated for seals within 50km of the survey area. The closest SAC designated for harbour seals is Slaney River Valley SAC over 100km from the survey area. The closest SACs designated for grey seal are Roaringwater Bay and Islands SAC (distance 93km) and Saltee Islands SAC (distance 88km).

3.2 RELEVANT NATURA 2000 SITES

Natura 2000 sites which are considered in this assessment include those sites which have marine interest features:

- Within or adjacent to the survey area
- Within the likely zone of impact of the survey area, typically within 10km.
- >10km from the survey, where interest features of the site have the potential to be significantly impacted by the survey

The identification of relevant SACs and SPAs depends largely on the zone of impact of potential effects from the geotechnical survey and the likelihood of habitats and species from designated Natura sites coming into contact with the zone of impacts. For example the zone of impact for sessile species and habitats is likely to be within the immediate vicinity of any components of the survey which could disturb the seabed (sediment probing, grab sampling). Since benthic species and habitats will not *travel* into the survey area, any

SACs designated for sessile species or habitats outside the survey area will not be affected by the survey. However, mobile species such as birds and marine mammals from designated sites outside the survey corridor may travel into the zones of impact and therefore may be affected.

Based on the relatively small size and short duration of the geotechnical survey, the assessment has focused on those sites within 10km of the proposed survey area.

Natura 2000 sites within 10km of the survey area where the interest features have the potential to fall within the survey area zone of impact are listed below in Table 3-1 and shown in Figure 3-1. Those sites which have the potential to be impacted are examined further.

The following Natura 2000 Sites identified for further examination include:

- 004022 Ballycotton Bay SPA
- 004023 Ballymacoda Bay SPA
- 000077 Ballymacoda Bay (Clonpriest and Pillmore) SAC
- 004028 Blackwater Estuary SPA
- 00217 Blackwater River (Cork) SAC

Figure 3-1: Natura 2000 Sites within 10km of the Proposed Survey Area (where the interest features have the potential to fall within the survey area zone of impact)

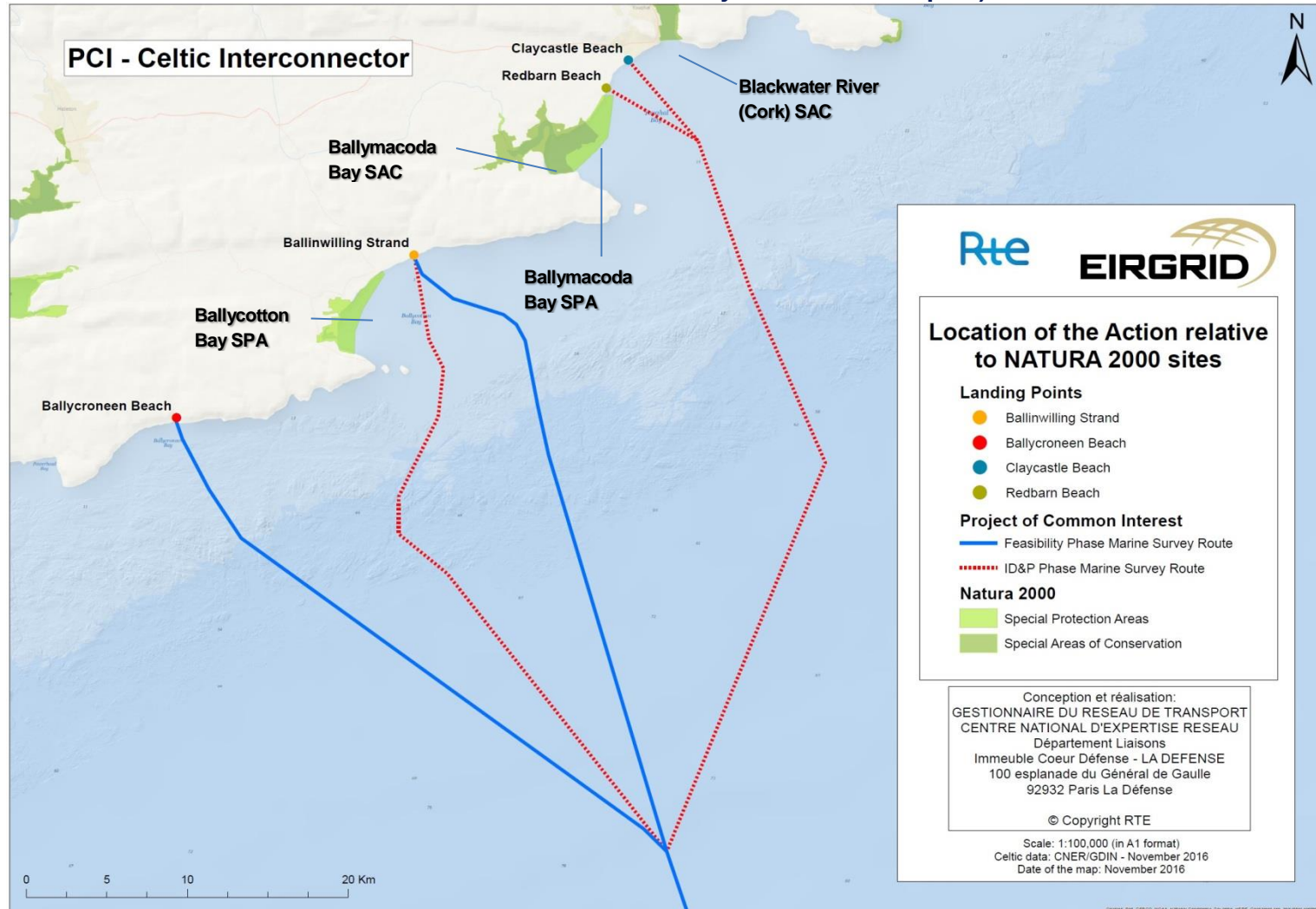


Table 3-1: Natura 2000 Sites within 10km of the Proposed Survey Area (where the interest features have the potential to fall within the survey area zone of impact)

Natura 2000 Site	Site Code and Name	Site Interest Features	Distance to project area	Is there a Potential Impact on this site?
SPA	004022 Ballycotton Bay	<ul style="list-style-type: none"> • Wintering birds: Teal (<i>Anas crecca</i>), Ringed Plover (<i>Charadrius hiaticula</i>), Golden Plover (<i>Pluvialis apricaria</i>), Grey Plover (<i>Pluvialis squatarola</i>), Lapwing (<i>Vanellus vanellus</i>), Black-tailed Godwit (<i>Limosa limosa</i>), Bar-tailed Godwit (<i>Limosa lapponica</i>), Curlew (<i>Numenius arquata</i>), Turnstone (<i>Arenaria interpres</i>), Common Gull (<i>Larus canus</i>), Lesser Black-backed Gull (<i>Larus fuscus</i>) • Wetlands & Waterbirds 	1.25km Ballinwilling landfall survey corridor	Yes (mobile species and potential interaction with survey area zone of impact)
SAC	000077 Ballymacoda (Clonpriest and Pillmore)	<ul style="list-style-type: none"> • Estuaries • Mudflats and sandflats not covered by seawater at low tide • Salicornia and other annuals colonizing mud and sand • Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) 	1.5km from Redbarn/ Claycastle landfall survey corridor 7.9km (by sea) Ballinwilling landfall survey corridor	No (habitats only , no mobile species)
SPA	004023 Ballymacoda Bay	<ul style="list-style-type: none"> • Wintering birds: Wigeon (<i>Anas penelope</i>), Teal (<i>Anas crecca</i>), Ringed Plover (<i>Charadrius hiaticula</i>), Golden Plover (<i>Pluvialis apricaria</i>), Grey Plover (<i>Pluvialis squatarola</i>), Lapwing (<i>Vanellus vanellus</i>), Sanderling (<i>Calidris alba</i>), Dunlin (<i>Calidris alpina</i>), Black-tailed Godwit (<i>Limosa limosa</i>), Bar-tailed Godwit (<i>Limosa lapponica</i>), Curlew (<i>Numenius arquata</i>), Redshank (<i>Tringa totanus</i>), Turnstone (<i>Arenaria interpres</i>), Black-headed Gull (<i>Chroicocephalus ridibundus</i>), Common Gull (<i>Larus canus</i>), Lesser Black-backed Gull (<i>Larus fuscus</i>) • Wetlands & Waterbirds 	Immediately adjacent to Redbarn landfall survey corridor Within 1km of Claycastle landfall survey corridor 5km (across land) Ballinwilling landfall survey corridor	Yes (mobile species and potential interaction with survey area zone of impact)

Natura 2000 Site	Site Code and Name	Site Interest Features	Distance to project area	Is there a Potential Impact on this site?
SAC	002170 Blackwater River (Cork)	Estuaries Tidal Mudflats and Sandflats Perennial Vegetation of Stony Banks Salicornia Mud Atlantic Salt Meadows Mediterranean Salt Meadows Floating River Vegetation Old Oak Woodlands Alluvial Forests* Freshwater Pearl Mussel (<i>Margaritifera margaritifera</i>) White-clawed Crayfish (<i>Austropotamobius pallipes</i>) Sea Lamprey (<i>Petromyzon marinus</i>) Brook Lamprey (<i>Lampetra planeri</i>) River Lamprey (<i>Lampetra fluviatilis</i>) Twaite Shad (<i>Alosa fallax</i>) Atlantic Salmon (<i>Salmo salar</i>) Otter (<i>Lutra lutra</i>) Killarney Fern (<i>Trichomanes speciosum</i>)	Within 1km of Claycastle landfall survey corridor 1.5km Redbarn Beach landfall survey	<p>No potential impacts on habitats</p> <p>Potential interaction with mobile species within survey area zone of impact - migrating Atlantic Salmon, Sea Lamprey, Twaite Shad</p>
SPA	004028 Blackwater Estuary	<ul style="list-style-type: none"> • Wintering birds: Wigeon (<i>Anas penelope</i>), Golden Plover (<i>Pluvialis apricaria</i>), Lapwing (<i>Vanellus vanellus</i>), Dunlin (<i>Calidris alpina</i>), Black-tailed Godwit (<i>Limosa limosa</i>), Bar-tailed Godwit (<i>Limosa lapponica</i>), Curlew (<i>Numenius arquata</i>), Redshank (<i>Tringa totanus</i>), • Wetlands & Waterbirds 	2.5km of Claycastle landfall survey corridor 3km of Redbarn Beach landfall survey	<p>Yes (mobile species and potential interaction with survey area zone of impact)</p>

4 ASSESSMENT OF LIKELY EFFECTS

4.1 IDENTIFICATION OF POTENTIAL IMPACTS

Based on a desk top review of the receiving environment and the interest features of Natura 2000 Sites which have the potential to be present within the zone of impact of the geotechnical survey, the following potential impacts have been identified:

- Disturbance from physical presence of personnel/equipment/vehicles during intertidal works.
- Disturbance from physical presence of survey vessels during shallow water and offshore survey works.
- Risk of Injury from collision (with survey vessels or equipment).
- Risk of injury to seals from ducted propellers
- Risk from exposure to hydrocarbon fuel spill.

4.2 ASSESSMENT OF POTENTIAL IMPACT SIGNIFICANCE: SITES WITHIN 10KM

The following assessment considers those potential impacts outlined in Section 4.1 which could affect the interest features of the identified relevant Natura 2000 sites within 10km of the proposed survey area.

Disturbance from physical presence/noise of personnel and land based equipment: Personnel and equipment used for the topographic survey in the intertidal area have the potential to disturb birds in the vicinity of Ballinwilling Strand and Redbarn and Claycastle Beaches. Disturbance could result in displacement from feeding grounds or disturbance to breeding sites. Any disturbance is likely to be in the immediate vicinity of the beaches. The intertidal survey areas do not overlap any SPAs and any birds visiting from SPAs outside these areas if disturbed are likely to be able to find alternative feeding grounds.

Furthermore, the closest SPAs to the intertidal survey areas are predominantly designated for wintering waders and water fowl which are shore birds. Given the operational period is planned to take place during the summer months and the birds of these sites are unlikely to travel far from their feeding grounds within the SPAs, they are unlikely to be affected by the survey.

Atlantic Salmon, Sea Lamprey and Twaité Shad are qualifying features of the River Blackwater SAC. These three fish species are anadromous, returning to their native rivers to spawn. Geotechnical survey off shore of Redbarn Beach and Claycastle Beach will not directly cross the mouth of the Blackwater River Estuary and the impacts of any underwater noise will be very localised and short term in nature. Any fish species that may be disturbed by underwater noise on migration to the Blackwater River are likely to be able to easily find alternative routes towards the mouth of the estuary. The potential impact is therefore considered to be not significant.

Disturbance from physical presence of survey vessels: The physical presence of the survey vessels may result in disturbance to birds present in the vicinity of the survey area. The SPAs within 10km of the survey area are

predominantly important for wintering shore birds which are therefore unlikely to be present within the survey area zone of impact during the geotechnical survey in shallow and offshore waters. Any disturbed seabirds such as tern which may forage outside the SPA for which they are a designated feature, are likely to be able to easily find alternative feeding grounds.

Risk from exposure to hydrocarbon fuel spill: The geo survey will result in a marginal increase in levels of marine traffic and therefore could increase the risk of accidents and resultant fuel spills. However, this risk is considered very low as all vessels will be MARPOL compliant, as per standard good practice.

4.2.1 Summary of Assessment within 10km

Three SPAs and two SACs are within 10km of the survey area. The main potential impact on the birds from these SPA sites is disturbance and displacement from feeding grounds outside their designated sites. Given the availability of alternative feeding grounds any effects are considered not significant. Only mobile species from SAC sites were considered, these included anadromous fish species Atlantic Salmon, Sea Lamprey and Twaite Shad. Potential disturbance (by underwater noise) of these species as they move into their native river is not considered significant.

4.3 **ASSESSMENT OF POTENTIAL IMPACT SIGNIFICANCE: SITES >10KM**

The interest features of some Natura 2000 Sites beyond 10km such as marine birds and marine mammals, which are highly mobile species, have the potential to travel to the survey area. Therefore this section considers those potential impacts listed in Section 4.1 which could affect Natura 2000 Sites beyond 10km of the survey area.

Disturbance from physical presence of survey vessels on foraging birds: It is recognised that some bird species can have large foraging distances¹ and therefore some birds from SPAs within a considerably large radius of the project area could potentially be present during the survey works. However, the main impact to these individuals would be disturbance and potential displacement from the feeding ground. As concluded in the assessment for impacts on birds within 10km of the survey, given the large areas of alternative feeding grounds within this radius any effects are likely to be negligible and therefore considered not significant.

Risk of Injury from collision: The presence of the survey vessel will only marginally increase the level of overall vessel activity within and adjacent to the proposed survey area. The survey vessel is not expected to regularly exceed 14 knots, a speed threshold above which the most lethal and serious injuries occur (Laist *et al* 2001). Therefore, although the results of a collision with a vessel associated with the project could be very serious and possibly life threatening for marine mammals, it is unlikely that a marine mammal will collide

¹ Natural England has prepared Technical Information Notes (TIN) on different bird species. These factsheets include maximum and mean foraging distances recorded in kms. For example, the common tern's maximum foraging distance is 24.2km and the common guillemot's maximum foraging distance is 200km. www.naturalengland.org.uk

with the slow moving vessel used for the geotechnical survey. The potential impact is therefore considered to be not significant.

Injury to seals from the use of vessels with ducted propellers:

There is potential for vessels with ducted propellers and thrusters to be used during the geotechnical survey, which could result in a risk of mortality to seals. Recent research on the occurrence of washed up seal carcasses in the UK suggests the fatal injuries on these seals are consistent with those which would be expected if the seals were being drawn through a ducted propeller or some types of thrusters.

The statutory nature conservation agencies (SNCAs) in the UK, have prepared an internal guidance note for advice on the potential risk of seal corkscrew injuries (JNCC 2012). This includes a risk assessment table (see Appendix D) which assesses the risk of injury as high, medium or low depending on seal sensitivities and displays a series of possible recommendations. According to this table, seals from SACs greater than 30nm from operations using ducted propellers or thrusters, are considered to be of low risk of injury. Given that the closest site designated for seals (Saltee Islands cSAC) is over 88km (47.5nm) from the survey area, the risk of injury is low therefore, the potential impact is considered to be not significant.

Cumulative Impacts

Potential cumulative impacts relate primarily to existing levels of disturbance on the beaches at the two landfall sites and from marine traffic. Currently the type of marine activity in the area of the shallow water survey falls into the leisure/sports traffic category. The coastline in the region of the survey area has the potential for a number of recreational activities including sailing, sea angling and swimming. Given the limited scope and short-term nature of the proposed survey works and existing background levels of disturbance, no significant intensification of disturbance is predicted.

5 SCREENING STATEMENT AND CONCLUSIONS

No Natura 2000 sites are located within the proposed survey area.

Three SPAs and two SACs are located within 10km of the proposed survey areas. The main potential impact on interest features of these sites is disturbance and possible displacement of marine birds from chosen feeding grounds. Possible disturbance of fish species entering the River Blackwater Estuary was also examined. Following the assessment it has been concluded that the effect of these impacts on the interest features and conservation objectives of the sites is not significant.

Potential impacts from disturbance and displacement to foraging birds from SPAs greater than 10km will be even less than for those within 10km of the survey area.

Interest features of Natura 2000 Sites greater than 10km from the survey area, which have the potential to be impacted by the survey works, include marine birds from SPAs and Annex II species from SACs designated for marine mammals (harbour porpoise, bottlenose dolphin, harbour seals and grey seals).

Low numbers of marine mammals may be present during the geotechnical survey, however the risk of disturbance and injury is considered low.

The overall conclusion is that the proposed geotechnical and benthic environment survey will not have any significant effects on the interest features and conservation objectives of any Natura 2000 Sites within or outside 10km of the survey area.

6 REFERENCES

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Irish whale and dolphin Group (2013), Atlas of the Distribution and Relative Abundance of Marine Mammals in Irish Offshore Waters: 2005 – 2011

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Laist, D.W., Knowlton, A.R., Mead, J.G., Collet, A.S. & Podesta, M. (2001). Collisions between ships and great whales. *Marine Mammal Science* 17(1):35-75.

The Department of Environment, Heritage and Local Government (DoEHLG) (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, 10 December 2009."

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Appendix A: Legislative Framework

6.1.1 EU Directives

The European Union (EU) introduced the Birds Directive in 1979 and the Habitats Directive in 1992 to tackle long – term declines in European biodiversity. The principal aim of both directives is to maintain, and where necessary restore, the favourable conservation status of natural habitats and species across Europe, thereby contributing to sustainable development and promoting the maintenance of Europe's biodiversity.

6.1.2 EC (Birds and Natural Habitats) Regulations 2011

In 1997, the Habitats Directive was transposed into Irish national law and the relevant Regulations, the European Communities (Natural Habitats) Regulations 1997. The European Communities (Birds and Natural Habitats) Regulations 2011 consolidate the European Communities (Natural Habitats) Regulations 1997 to 2005 and the European Communities (Birds and Natural Habitats)(Control of Recreational Activities) Regulations 2010.

6.1.3 Natura 2000 Network

Natura 2000 is an EU wide network of nature protection areas established under the EU Habitats Directive². The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats. It comprises Special Areas of Conservation (SAC) and also incorporates Special Protection Areas (SPAs) which together are collectively known as European Sites.

In Ireland the Natura 2000 network of European Sites comprises:

- Special Areas of Conservation (SACs)
- Candidate SACs
- Special Protection Areas (SPAs)
- Proposed SPAs

SACs are designated under the EU Habitats Directive for the conservation of Annex I habitats (including priority habitats which are in danger of disappearance) and Annex II species (other than birds). Currently all SACs in Ireland are candidate SACs and there are no priority species.

SPAs are designated under the EU Birds Directive³ for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats.

The Annexed habitats and species correspond to the qualifying interests of the sites from which conservation objectives are derived.

² Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

³ Council Directive 2009/147/EC on the conservation of wild birds

6.1.4 Articles 6(3) and 6(4) of the Habitats Directive

In accordance with articles 6(3) and 6(4) of the Habitats Directive, any plan or project that is not directly connected with or necessary to the management of a site must be subject to Appropriate Assessment of its implications for the Natura 2000 site in view of the site's 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 or projects*" (EC, 2006). The precautionary principle which underpins the Habitats Directive determines where doubt exists about the risk of a significant effect an AA must be carried out.

Box 1 provides the full text of Article 6(3) and 6(4) of the Habitats Directive. In summary 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.

Box 1: Full text of Article 6(3) and 6(4) of the Habitats Directive

6(3) – 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.

6(4) – If, in spite of a negative assessment of the implications for the 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, the Member State 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.

Appendix B: Site Synopses

SITE SYNOPSIS 1

SITE NAME: BALLYCOTTON BAY SPA

SITE CODE: 004022

Situated on the south coast of Co. Cork, Ballycotton Bay is an east-facing coastal complex, which stretches northwards from Ballycotton to Ballynamona, a distance of c. 2 km. The site comprises two sheltered inlets which receive the flows of several small rivers. The southern inlet had formerly been lagoonal (Ballycotton Lake) but breaching of the shingle barrier in recent times has resulted in the area reverting to an estuarine system.

The principal habitat within the site is inter-tidal sand and mudflats. These are mostly well-exposed and the sediments are predominantly firm sands. In the more sheltered conditions of the inlets, sediments contain a higher silt fraction. The inter-tidal flats provide the main feeding habitat for the wintering birds. Sandy beaches are well represented. The shingle beach is mobile and is influenced by storms, which create open conditions that favour a particular suite of species. Species found here include Grass-leaved Orache (*Atriplex littoralis*), Black Mustard (*Brassica nigra*), Sand Couch (*Elymus farctus*) and Lyme-grass (*Leymus arenarius*). Also growing on the shingle beach is Sea-kale (*Crambe maritima*), a rare species that is listed in the Red Data Book. Salt marshes fringe the flats in the sheltered inlets and these provide high tides roosts. A small area of shallow marine water is also included.

Ballycotton Bay supports an excellent diversity of wintering waterfowl species, and has nationally important populations of nine species as follows (all figures are average peaks for the 5 winters 1995/96-1999/00): Teal (1,296), Ringed Plover (248), Golden Plover (4,284), Grey Plover (187), Lapwing (4,371), Sanderling (79), Bar-tailed Godwit (261), Curlew (1,254) and Turnstone (288). Other species which occur in important numbers, and at times exceed the threshold for national importance, include Shelduck (137), Wigeon (757), Mallard (366), Oystercatcher (362), Dunlin (812), Black-tailed Godwit (168), Redshank (149) and Greenshank (17). The population of Golden Plover is of particular note as it represents 2.8% of the national total, while the Grey Plover and Lapwing populations each represent 2.5% of their respective national totals. Ballycotton Bay was formerly of importance for Bewick's Swan but the birds have abandoned the site since the reversion of the lagoonal habitat to estuarine conditions. The site is also important for wintering gulls, especially Lesser Blackbacked Gulls (1,606) in autumn and early winter. Common Gull (310) and Great Black-backed Gull (324) are well represented in winter.

The site is a well-known location for passage waders, especially in autumn. Species such as Ruff, Little Stint, Curlew Sandpiper, Green Sandpiper and Spotted Redshank occur annually though in variable numbers. Small numbers of Ruff may also be seen in late winter and spring. Rarer waders, such as Wood Sandpiper and Pectoral Sandpiper, have also been recorded.

While relatively small in area, Ballycotton Bay supports an excellent diversity of wintering waterfowl and has nationally important populations of nine species, of which two, Golden Plover and Bar-tailed Godwit, are listed on Annex I of the E.U. Birds Directive. Bird populations have been well-monitored in recent years.

6.10.2004

SITE SYNOPSIS 2

SITE NAME: BALLYMACODA BAY SPA

SITE CODE: 004023

This coastal site stretches north-east from Ballymacoda to within several kilometres of Youghal, Co. Cork. It comprises the estuary of the Womagh River, a substantial river which drains a large agricultural catchment. Part of the tidal section of the river is included in the site and on the seaward side the boundary extends to, and includes, Bog Rock, Barrel Rocks and Black Rock. The inner part of the estuary is well sheltered by the Ring peninsula, a stabilised sand spit with sand dunes at its northern end and salt marshes on the landward side. Sediment types vary from muds to muddy sands in the inner part to fine rippled sands in the outer exposed part. The macro-invertebrate fauna of the intertidal flats is well-developed, with the following species occurring: Ragworm (*Hediste diversicolor*), the crustacean *Corophium volutator*, Lugworm (*Arenicola marina*), Baltic Tellin (*Macoma balthica*), Peppery Furrow-shell (*Scrobicularia plana*), Common Cockle (*Cerastoderma edule*) and the tubeworm *Lanice conchilega*. In the more sheltered areas the intertidal flats are colonised by mats of green algae (mostly *Ulva spp.*), with brown seaweeds occurring on the rocky shores of the shingle spits. Common Cord-grass (*Spartina anglica*) has spread within the estuary since the late 1970s. The main channel is flanked by salt marshes and wet fields, much of the latter being improved for agriculture.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Wigeon, Teal, Ringed Plover, Golden Plover, Grey Plover, Lapwing, Sanderling, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Turnstone, Black-headed Gull, Common Gull and Lesser Black-backed Gull. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering waterbirds.

The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

Ballymacoda Bay is of high ornithological importance for supporting an excellent diversity and large number of wintering waterbirds – it is of international importance because it regularly supports an assemblage of over 20,000 birds. The site provides both feeding and roosting areas for the birds. Furthermore, both Golden Plover (10,920) and Black-tailed Godwit (765) occur here in internationally important numbers (all counts given are mean peaks for the five year period 1995/96-1999/2000). A further eleven species of waders and ducks occur here in nationally important numbers, i.e. Wigeon (907), Teal (887), Ringed Plover (153), Grey Plover (535), Lapwing (4,063), Sanderling (98), Dunlin (3,192), Bar-tailed Godwit (581), Curlew (1,145), Redshank (357) and Turnstone (137). The site is also notable for supporting nationally important populations of some gull species in autumn and winter: Black-headed Gull (1,560), Common Gull (1,120) and Lesser Black-backed Gull (5,051). A total of 107 species were recorded from the site between 1971 and 1988.

Ballymacoda Bay SPA is one of the most important sites in the country for wintering waterfowl. It qualifies for international importance on the basis of regularly exceeding 20,000 wintering birds but also for its Golden Plover and Black-tailed Godwit populations. In addition, it supports nationally important populations of a further fourteen species. Two of the species which occur, Golden Plover and Bar-tailed

Godwit, are listed on Annex I of the E.U. Birds Directive. Ballymacoda Bay is also a Ramsar Convention site.

6.10.2014

SITE SYNOPSIS 3

Site Name: Ballymacoda (Clonpriest and Pillmore) SAC

Site Code: 000077

This coastal site stretches north-east from Ballymacoda to within about 6 km of Youghal, Co. Cork. Though moderate in size, it has a good diversity of coastal habitats, including several listed on Annex I of the E.U. Habitats Directive.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [1130] Estuaries
- [1140] Tidal Mudflats and Sandflats
- [1310] Salicornia Mud
- [1330] Atlantic Salt Meadows
- [1410] Mediterranean salt meadows (*Juncetalia maritimi*)

The site comprises the estuary of the Womanagh River, a substantial river which drains a large agricultural catchment. Part of the tidal section of the river is included in the site and on the seaward side the boundary extends to the low tide mark. The inner part of the estuary is well sheltered by a stabilised sandy peninsula (Ring peninsula). Intertidal mudflats and sandflats, which form part of the overall estuarine habitat, are well represented. The sediment types vary from muds to muddy sands in the inner part, to fine rippled sands in the outer exposed part. The macro-invertebrate fauna of the intertidal flats is well-developed, with the following species occurring: *Corophium volutator*, *Hediste diversicolor*, *Arenicola marina*, *Macoma balthica*, *Scrobicularia plana*, *Cerastoderma edule* and *Lanice conchilega*. In the more sheltered areas the intertidal flats are colonised by mats of green algae (mostly *Enteromorpha* spp.), with brown seaweeds occurring on the rocky shores of the shingle spits.

The main channel is flanked by saltmarshes and wet fields, much of the latter being improved for agriculture. The saltmarshes are mainly classified as Atlantic salt meadows, with such species as Sea Purslane (*Halimione portulacoides*), Lax-flowered Sea Lavender (*Limonium humile*) and Sea Milkwort (*Glaux maritima*). A large area of Mediterranean salt meadows is found on the island at Clonpriest East. This saltmarsh is well-established and has a well-developed topography with a highly representative vegetation cover. There is some saltmarsh dominated by dense Sea Rush (*Juncus maritimus*). This is a typical grassy upper Mediterranean salt meadow community and is located along the terrestrial grassy ridge and represents one of the upper saltmarsh communities in the overall saltmarsh zonation. The habitat is not grazed and a generally tall sward height is present. Other species present include frequent Red Fescue (*Festuca rubra*) and smaller amounts of Creeping Bent (*Agrostis stolonifera*), Saltmarsh Rush (*Juncus gerardii*), Common Scurvy-grass (*Cochlearia officinalis*), Sea Milkwort, Sea Plantain (*Plantago maritima*) and Sea Arrowgrass (*Triglochin maritima*). Curled Dock (*Rumex crispus*) is also present on some mounds.

A similar community is also found in the established saltmarsh along the west side of The Duck. This community also contains Parsley Water-dropwort (*Oenanthe lachenalii*) and Distant Sedge (*Carex distans*). Sea Rush occasionally extends its distribution into a transitional zone landward of the Mediterranean salt meadow that is dominated by Common Couch (*Elymus repens*). There is also some mosaic type

vegetation present with less frequent cover of Sea Rush inter-mixed with a mid-marsh *Armeria-Plantago* sward. The Sea Rush clumps are present on small grassy tussocks with Red Fescue and Sea Milkwort. Other species present in this vegetation community include Sea Aster (*Aster tripolium*), Lax-flowered Sea Lavender, Saltmarsh Rush and Sea Purslane (*Atriplex portulacoides*). This community has a well-developed salt pan topography. Small amounts of Common Cordgrass (*Spartina townsendii*) are found within this community within some of the pans.

A rarer sub-type of Mediterranean salt meadow with Borrer's Saltmarsh-grass (*Puccinellia fasciculata*) as an indicator species is present at this site. This is a very notable population of this rare species, which is listed on the Flora (Protection) Order, 2015 and is also listed in the Red Data book. The species is only found from seven 10km² squares along the Barrow Estuary, Wexford and Dublin shorelines since 1960. The Borrer's Saltmarsh-grass is present in a narrow band of saltmarsh developing along the upper extent of tidal inundation in the area behind the embankment.

Part of the site is also a Special Protection Area (SPA) for birds; the main interest of the area lies in its waterfowl, with flocks of up to 20,000 regularly present during winter (e.g. 5 year mean peak, 1995/96-1999/00 = 24,784). A total of 107 wetland species have been recorded from this site. Of particular note is that the site supports an internationally important population of Black-tailed Godwit (899, average peak 1995/96–1999/00). In addition, it supports nationally important populations of a further 15 species (all figures are average peaks for the 5 winters 1995/96 to 1999/2000): Shelduck (150), Wigeon (1,232), Teal (1,170), Ringed Plover (236), Golden Plover (14,480), Grey Plover (688), Lapwing (5,893), Knot (378), Sanderling (147), Dunlin (4,410), Bar-tailed Godwit (792), Curlew (1,621), Redshank (511), Greenshank (24) and Turnstone (191). The presence of large flocks of Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive.

A range of other species have populations of regional or local importance, including Brent Goose (100), Shoveler (29) and Oystercatcher (682). The site is also notable for supporting large concentrations of gulls in autumn and winter. Principal species are Black-headed Gull (2,320), Common Gull (1,220), Lesser Black-backed Gull (6,285), Herring Gull (128) and Great Black-backed Gull (455).

Much of the land adjacent to the estuary has been reclaimed and is subject to intensive agriculture, with cattle grazing and silage being the most common land uses. However, many of these fields remain marshy and are important feeding and roosting areas for wildfowl, Golden Plover and Lapwing. The most serious threat to the site is water pollution, primarily from slurry spreading.

Ballymacoda is a fine example of an estuarine complex, with intertidal flats well represented. The site is of high conservation importance because several of the habitats present are listed on Annex I of the E.U. Habitats Directive. However, there is also considerable ornithological interest; Ballymacoda is one of the most important bird sites in the country and supports a higher number of waders than any other Co. Cork estuary of its size. It also contains important numbers of Golden Plover and Bar-tailed Godwit, two E.U. Birds Directive Annex I species, an internationally important population of Black-tailed Godwit, and nationally important numbers of a further 13 bird species.

Version date: 10.12.2015

SITE SYNOPSIS 4

SITE NAME: BLACKWATER ESTUARY SPA

SITE CODE: 004028

The Blackwater Estuary SPA is a moderately-sized, sheltered south-facing estuary, which extends from Youghal New Bridge to the Ferry Point peninsula, close to where the river enters the sea. It comprises a section of the main channel of the River Blackwater to Ballynaclash Quay. At low tide, intertidal flats are exposed on both sides of the channel. On the eastern side the intertidal channel as far as Kinsalebeg and Moord Cross Roads is included, while on the west side the site includes part of the estuary of the Tourig River as far as Kilmagner.

The intertidal sediments are mostly muds or sandy muds, reflecting the sheltered conditions of the estuary. Green algae (*Ulva spp.*) are frequent on the mudflats during summer, and Bladder Wrack (*Fucus vesiculosus*) occurs on the upper more stony shorelines. The sediments have a macrofauna typical of muddy sands, with polychaete worms such as Lugworm (*Arenicola marina*), Ragworm (*Hediste diversicolor*) and the marine bristle worm *Nephtys hombergii* being common. Salt marshes fringe the estuarine channels, especially in the sheltered creeks.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Wigeon, Golden Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew and Redshank. The E.U. Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated waterbirds are of special conservation interest for Wetland & Waterbirds.

The Blackwater Estuary is of high ornithological importance for wintering waterfowl, providing good quality feeding areas for an excellent diversity of waterfowl species. At high tide, the birds roost along the shoreline and salt marsh fringe, especially in the Kinsalebeg area. The site supports an internationally important population of Black-tailed Godwit (620) and has a further seven species with nationally important populations: Wigeon (953), Golden Plover (2,628), Lapwing (3,054), Dunlin (1,807), Bar-tailed Godwit (161), Curlew (1,007) and Redshank (520) - all figures are mean peaks for the five winters 1995/96 to 1999/2000.

Other species which occur include Light-bellied Brent Goose (19), Shelduck (123), Teal (407), Mallard (105), Shoveler (21), Red-breasted Merganser (7), Cormorant (43), Little Egret (12), Grey Heron (17), Oystercatcher (401), Ringed Plover (28), Grey Plover (49), Knot (43), Greenshank (25) and Turnstone (52). The site is also notable for the large concentrations of gulls that occur in autumn and winter, including Lesser Black-backed Gull (390), Black-headed Gull (345), Common Gull (253), Great Black-backed Gull (227) and Herring Gull (64).

The Blackwater Estuary SPA is an internationally important wetland site on account of the population of Black-tailed Godwit it supports. It is also of high importance in a national context, with seven species having populations which exceed the thresholds for national importance. The occurrence of Little Egret, Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive. The Blackwater Estuary is also a Ramsar Convention site.

7.7.2014

SITE SYNOPSIS 5

Site Name: Blackwater River (Cork/Waterford) SAC

Site Code: 002170

The River Blackwater is one of the largest rivers in Ireland, draining a major part of Co. Cork and five ranges of mountains. In times of heavy rainfall the levels can fluctuate widely by more than 12 feet on the gauge at Careysville. The peaty nature of the terrain in the upper reaches and of some of the tributaries gives the water a pronounced dark colour. The site consists of the freshwater stretches of the River Blackwater as far upstream as Ballydesmond, the tidal stretches as far as Youghal Harbour and many tributaries, the larger of which include the Licky, Bride, Flesk, Chimneyfield, Finisk, Araglin, Awbeg (Buttevant), Clyda, Glen, Allow, Dalua, Brogeen, Rathcool, Finnow, Owentaraglin and Awnaskirtaun. The portions of the Blackwater and its tributaries that fall within this SAC flow through the counties of Kerry, Cork, Limerick, Tipperary and Waterford. Nearby towns include Rathmore, Millstreet, Kanturk, Banteer, Mallow, Buttevant, Doneraile, Castletownroche, Fermoy, Ballyduff, Rathcormac, Tallow, Lismore, Cappoquin and Youghal.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

- [1130] Estuaries
- [1140] Tidal Mudflats and Sandflats
- [1220] Perennial Vegetation of Stony Banks
- [1310] Salicornia Mud
- [1330] Atlantic Salt Meadows
- [1410] Mediterranean Salt Meadows
- [3260] Floating River Vegetation
- [91A0] Old Oak Woodlands
- [91E0] Alluvial Forests*
- [1029] Freshwater Pearl Mussel (*Margaritifera margaritifera*)
- [1092] White-clawed Crayfish (*Austropotamobius pallipes*)
- [1095] Sea Lamprey (*Petromyzon marinus*)
- [1096] Brook Lamprey (*Lampetra planeri*)
- [1099] River Lamprey (*Lampetra fluviatilis*)
- [1103] Twaité Shad (*Alosa fallax*)
- [1106] Atlantic Salmon (*Salmo salar*)
- [1355] Otter (*Lutra lutra*)
- [1421] Killarney Fern (*Trichomanes speciosum*)

The Blackwater rises in boggy land in east Kerry, where Namurian grits and shales build the low heather-covered plateaux. Near Kanturk the plateaux enclose a basin of productive Coal Measures. On leaving the Namurian rocks the Blackwater turns eastwards along the northern slopes of the Boggeragh Mountains before entering the narrow limestone strike vale at Mallow. The valley deepens as first the Nagles Mountains and then the Knockmealdowns impinge upon it. Interesting geological features along this stretch of the Blackwater Valley include limestone cliffs and caves near the villages and small towns of Killavullen and Ballyhooly; the Killavullen caves contain fossil material from the end of the glacial period. The associated basic soils in

this area support the growth of plant communities which are rare in Cork because in general the county's rocks are acidic. At Cappoquin the river suddenly turns south and cuts through high ridges of Old Red Sandstone. The Araglin valley is predominantly underlain by sandstone, with limestone occurring in the lower reaches near Fermoy. Wet woodlands are found where river embankments have broken down and channel edges are subject to daily inundation. This is particularly evident in the steep-sided valley of the River Bride, between Cappoquin and Youghal. The river side of the embankments was often used for willow growing in the past (most recently at Cappoquin) so that the channel is lined by narrow woods of White and Almond-leaved Willow (*Salix alba* and *S. triandra*), with isolated Crack Willow (*S. fragilis*) and Osier (*S. viminalis*). Rusty Willow (*S. cinerea* subsp. *oleifolia*) spreads naturally into the sites and occasionally, as at Villierstown on the Blackwater and Sapperton on the Bride, forms woods with a distinctive mix of woodland and marsh plants, including Gypsywort (*Lycopus europaeus*), Guelder-rose (*Viburnum opulus*), Bittersweet (*Solanum dulcamara*) and various mosses and algae. These wet woodlands form one of the most extensive tracts of the wet woodland habitat in the country.

A small stand of Yew (*Taxus baccata*) woodland occurs within the site. This is on a limestone ridge at Dromana, near Villierstown. While there are some patches of the wood with a canopy of Yew and some very old trees, the quality is generally poor due to the dominance of non-native and invasive species such as Sycamore (*Acer pseudoplatanus*), Beech (*Fagus sylvatica*) and Douglas Fir (*Pseudotsuga menziesii*). However, it does have the potential to develop into a Yew dominated stand in the long term and the site should continue to be monitored.

Marshes and reedbeds cover most of the flat areas beside the rivers and often occur in mosaic with the wet woodland. Common Reed (*Phragmites australis*) is ubiquitous and is harvested for thatching. There is also much Marsh-marigold (*Caltha palustris*) and, at the edges of the reeds, the Greater and Lesser Pond-sedge (*Carex riparia* and *C. acutiformis*). Hemlock Water-dropwort (*Oenanthe crocata*), Wild Angelica (*Angelica sylvestris*), Reed Canary-grass (*Phalaris arundinacea*), Meadowsweet (*Filipendula ulmaria*), Common Nettle (*Urtica dioica*), Purple Loosestrife (*Lythrum salicaria*), Common Valerian (*Valeriana officinalis*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*) are all also found.

At Banteer there are a number of hollows in the sediments of the floodplain where subsidence and subterranean drainage have created isolated wetlands, sunk below the level of the surrounding fields. The water rises and falls in these holes depending on the water table and several different communities have developed on the acidic or neutral sediments. Many of the ponds are ringed with Rusty Willow, rooted in the mineral soils but sometimes collapsed into the water. Beneath the densest stands are woodland herbs like Yellow Pimpernel (*Lysimachia nemorum*), with locally abundant Common Water-starwort (*Callitriche stagnalis*) and Marsh Ragwort (*Senecio aquaticus*). One of the depressions has Silver Birch (*Betula pendula*), Ash (*Fraxinus excelsior*), Crab Apple (*Malus sylvestris*) and a little Pedunculate Oak (*Quercus robur*) in addition to the willows.

Floating river vegetation is found along much of the freshwater stretches within the site. The species list is quite extensive, with species such as water-crowfoots, including Pond Water-crowfoot (*Ranunculus peltatus*), Canadian Pondweed (*Elodea canadensis*), pondweed species, including Broad-leaved Pondweed (*Potamogeton natans*), water-milfoil species (*Myriophyllum* spp.), Common Club-rush (*Scirpus lacustris*), water-starwort species (*Callitriche* spp.), Lesser Water-parsnip (*Berula erecta*) particularly on the Awbeg, Water-cress (*Nasturtium officinale*), Hemlock

Water-dropwort, Fine-leaved Water-dropwort (*O. aquatica*), Common Duckweed (*Lemna minor*), Yellow Water-lily (*Nuphar lutea*), Unbranched Bur-reed (*Sparganium emersum*) and the moss *Fontinalis antipyretica* all occurring.

The grasslands adjacent to the rivers of the site are generally heavily improved, although liable to flooding in many places. However, fields of more species-rich wet grassland with species such as Yellow Iris (*Iris pseudacorus*), Meadowsweet, Meadow Buttercup (*Ranunculus acris*) and rushes (*Juncus spp.*) occur occasionally. Extensive fields of wet grassland also occur at Annagh Bog on the Awbeg. These fields are dominated by Tufted Hair-grass (*Deschampsia cespitosa*) and rushes.

The Blackwater Valley has a number of dry woodlands; these have mostly been managed by the estates in which they occur, frequently with the introduction of Beech and a few conifers, and sometimes of the invasive species Rhododendron (*Rhododendron ponticum*) and Cherry Laurel (*Prunus laurocerasus*). Oak woodland is well developed on sandstone about Ballinatray, with the acid oak woodland community of Holly (*Ilex aquifolium*), Bilberry (*Vaccinium myrtillus*), Great Wood-rush (*Luzula sylvatica*) and the ferns *Dryopteris affinis* and *D. aemula* occurring in one place. Irish Spurge (*Euphorbia hyberna*) continues eastwards on acid rocks from its headquarters to the west, but there are also many plants of richer soils, for example Wood Violet (*Viola reichenbachiana*), Goldilocks Buttercup (*Ranunculus auricomus*), Broad-leaved Helleborine (*Epipactis helleborine*) and Red Campion (*Silene dioica*). Oak woodland is also found in Rincew, Carrigane, Glendine, Newport and Dromana. The spread of Rhododendron is locally a problem, as is over-grazing. A few limestone rocks stand over the river in places showing traces of a less acidic woodland type with Ash, False Brome (*Brachypodium sylvaticum*) and Early-purple Orchid (*Orchis mascula*).

In the vicinity of Lismore, two deep valleys cut in Old Red Sandstone join to form the Owenashad River before flowing into the Blackwater at Lismore. These valleys retain something close to their original cover of oak with Downy Birch (*Betula pubescens*), Holly and Hazel (*Corylus avellana*) also occurring. There has been much planting of Beech (as well as some of coniferous species) among the oak on the shallower slopes and here both Rhododendron and Cherry Laurel have invaded the woodland.

The oak wood community in the Lismore and Glenmore valleys is of the classic upland type, in which some Rowan (*Sorbus aucuparia*) and Downy Birch occur. Honeysuckle (*Lonicera periclymenum*) and Ivy (*Hedera helix*) cover many of the trees while Great Wood-rush, Bluebell (*Hyacinthoides non-scripta*), Wood-sorrel (*Oxalis acetosella*) and, locally, Bilberry dominate the ground flora. Ferns present on the site include Hard Fern (*Blechnum spicant*), Male Fern (*Dryopteris filix-mas*), the buckler-ferns *D. dilatata* and *D. aemula*, and Lady Fern (*Athyrium filix-femina*). There are many mosses present and large species such as *Rhytidiadelphus spp.*, *Polytrichum formosum*, *Mnium hornum* and *Dicranum spp.* are noticeable. The lichen flora is important and includes 'old forest' species which imply a continuity of woodland here since ancient times. Tree Lungwort (*Lobaria spp.*) is the most conspicuous and is widespread.

The Araglin valley consists predominantly of broadleaved woodland. Oak and Beech are joined by Hazel, Wild Cherry (*Prunus avium*) and Goat Willow (*Salix caprea*). The ground flora is relatively rich, with Pignut (*Conopodium majus*), Ramsons (*Allium ursinum*), Garlic Mustard (*Alliaria petiolata*) and Wild Strawberry (*Fragaria vesca*). The presence of Ivy Broomrape (*Orobanche hederæ*), a local species within Ireland, suggests that the woodland, along with its attendant Ivy, is long established.

Along the lower reaches of the Awbeg River, the valley sides are generally cloaked with mixed deciduous woodland of estate origin. The dominant species is Beech, although a range of other species are also present, e.g. Sycamore, Ash and Horse-chestnut (*Aesculus hippocastanum*). In places the alien invasive species Cherry Laurel dominates the understorey. Parts of the woodlands are more semi-natural in composition, being dominated by Ash, with Hawthorn (*Crataegus monogyna*) and Spindle (*Euonymus europaea*) also present. However, the most natural areas of woodland appear to be the wet areas dominated by Alder and willows (*Salix spp.*). The ground flora of the dry woodland areas features species such as Pignut, Wood Avens (*Geum urbanum*), Ivy and Soft Shield-fern (*Polystichum setiferum*), while the ground flora of the wet woodland areas contains characteristic species such as Remote Sedge (*Carex remota*) and Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*).

In places along the upper Bride, scrubby, semi-natural deciduous woodland of willow, oak and Rowan occurs, with abundant Great Wood-rush in the ground flora. The Bunaglanna River passes down a very steep valley, flowing in a north-south direction to meet the Bride River. It flows through blanket bog to heath and then scattered woodland. The higher levels of moisture here enable a vigorous moss and fern community to flourish, along with a well-developed epiphyte community on the tree trunks and branches.

At Banteer a type of wetland occurs near the railway line which offers a complete contrast to the others. Old turf banks are colonised by Royal Fern (*Osmunda regalis*) and Eared Willow (*Salix aurita*), and between them there is a sheet of Bottle Sedge (*Carex rostrata*), Marsh Cinquefoil (*Potentilla palustris*), Bogbean (*Menyanthes trifoliata*), Marsh St. John's-wort (*Hypericum elodes*) and the mosses *Sphagnum auriculatum* and *Aulacomnium palustre*. The cover is a scraw (i.e. floating vegetation) with characteristic species like Marsh Willowherb (*Epilobium palustre*) and Early Marsh-orchid (*Dactylorhiza incarnata*).

The soil high up the Lismore valleys and in rocky places is poor in nutrients but it becomes richer where streams enter and also along the valley bottoms. In such sites Wood Speedwell (*Veronica montana*), Wood Anemone (*Anemone nemorosa*), Enchanter's-nightshade (*Circaea lutetiana*), Barren Strawberry (*Potentilla sterilis*) and shield-fern (*Polystichum sp.*) occur. There is some Ramsons, Three-nerved Sandwort (*Moehringia trinervia*) and Early-purple Orchid (*Orchis mascula*) locally, with Opposite-leaved Golden-saxifrage, Meadowsweet and Bugle (*Ajuga reptans*) in wet places. A stand of Hazel woodland at the base of the Glenakeeffe valley shows this community well.

The area has been subject to much tree felling in the recent past and re-sprouting stumps have given rise to areas of bushy Hazel, Holly, Rusty Willow and Downy Birch. The ground in the clearings is heathy with Heather (*Calluna vulgaris*), Slender St John's-wort (*Hypericum pulchrum*) and the occasional Broom (*Cytisus scoparius*) occurring.

The estuary and the habitats within and associated with it form a large component of the site. Very extensive areas of intertidal flats, comprised of substrates ranging from fine, silty mud to coarse sand with pebbles/stones are present. The main expanses occur at the southern end of the site, with the best examples at Kinsalebeg in Co. Waterford, and between Youghal and the main bridge north of it across the river in Co. Cork. Other areas occur along the tributaries of the Licky in east Co. Waterford, and Glendine, Newport, Bride and Killahaly Rivers in Waterford west of the Blackwater. There are also large tracts along the Tourig River in Co. Cork. There are narrow

bands of intertidal flats along the main river as far north as Camphire Island. Patches of green filamentous algae (*Ulva sp.* and *Enteromorpha sp.*) occur in places, while fucoid algae are common on the more stony flats, even as high upstream as Glenassy or Coneen.

The area of saltmarsh within the site is small. The best examples occur at the mouths of the tributaries and in the townlands of Foxhole and Blackbog. Those found are generally characteristic of Atlantic salt meadows. The species list at Foxhole consists of Common Saltmarsh-grass (*Puccinellia maritima*), small amounts of Greater Sea-spurrey (*Spergularia media*), glasswort (*Salicornia sp.*), Sea Arrowgrass (*Triglochin maritima*), Annual Sea-blite (*Suaeda maritima*) and Sea Purslane (*Halimione portulacoides*) - the latter a very recent coloniser. Some Sea Aster (*Aster tripolium*) occurs, generally with Creeping Bent (*Agrostis stolonifera*). Sea Couch (*Elymus pycnanthus*) and small isolated clumps of Sea Club-rush (*Scirpus maritimus*) are also seen. On the Tourig River additional saltmarsh species found include sea-lavenders (*Limonium spp.*), Thrift (*Armeria maritima*), Red Fescue (*Festuca rubra*), Common Scurvygrass (*Cochlearia officinalis*) and Sea Plantain (*Plantago maritima*). Oraches (*Atriplex spp.*) are found on channel edges. Species such as Saltmarsh Rush (*Juncus gerardi*) and Sea Rush (*J. maritimus*) are found in places in this site also, and are indicative of Mediterranean salt meadows. Areas of *Salicornia* mud are found at the eastern side of the townland of Foxhole above Youghal, at Blackbog, along the Tourig and Kinsalebeg estuaries.

The shingle spit at Ferrypoint supports a good example of perennial vegetation of stony banks. The spit is composed of small stones and cobbles and has a well developed and diverse flora. At the lowest part, Sea Beet (*Beta vulgaris subsp. maritima*), Curled Dock (*Rumex crispus*) and Yellow Horned-poppy (*Glaucium flavum*) occur, while at a slightly higher level Sea Mayweed (*Matricaria maritima*), Cleavers (*Galium aparine*), Rock Samphire (*Crithmum maritimum*), Sea Sandwort (*Honkenya peploides*), Spear-leaved Orache (*Atriplex prostrata*) and Babington's Orache (*A. glabriuscula*). Other species present include Sea Rocket (*Cakile maritima*), Herb-Robert (*Geranium robertianum*), Red Fescue and Kidney Vetch (*Anthyllis vulneraria*). The top of the spit is more vegetated and supports lichens and bryophytes, including *Tortula ruraliformis* and *Rhytidiadelphus squarrosus*.

The site supports several Red Data Book plant species, i.e. Starved Wood-sedge (*Carex depauperata*), Killarney Fern (*Trichomanes speciosum*), Pennyroyal (*Mentha pulegium*), Bird's-nest Orchid (*Neottia nidus-avis*), Golden Dock (*Rumex maritimus*) and Bird Cherry (*Prunus padus*). The first three of these are also protected under the Flora (Protection) Order, 2015, while the Killarney Fern is also listed on Annex II of the E.U. Habitats Directive. The following plants, relatively rare nationally, are also found within the site: Toothwort (*Lathraea squamaria*) - associated with woodlands on the Awbeg and Blackwater; Summer Snowflake (*Leucojum aestivum*) and Flowering Rush (*Butomus umbellatus*) on the Blackwater; Common Calamint (*Calamintha ascendens*), Red Campion, Sand Leek (*Allium scorodoprasum*) and Wood Club-rush (*Scirpus sylvaticus*) on the Awbeg.

The site is also important for the presence of several E.U. Habitats Directive Annex II animal species, including Sea Lamprey (*Petromyzon marinus*), Brook Lamprey (*Lampetra planeri*), River Lamprey (*L. fluviatilis*), Twaite Shad (*Alosa fallax fallax*), Freshwater Pearl Mussel (*Margaritifera margaritifera*), Otter (*Lutra lutra*) and Salmon (*Salmo salar*). The Awbeg supports a population of White-clawed Crayfish (*Austropotamobius pallipes*). This threatened species has been recorded from a number of locations and its remains are also frequently found in Otter spraints,

particularly in the lower reaches of the river. The freshwater stretches of the Blackwater and Bride Rivers are designated salmonid rivers. The Blackwater is noted for its enormous run of salmon over the years. The river is characterised by significant pools, streams, glides, and generally, a good push of water coming through except in very low water. Spring salmon fishing can be carried out as far upstream as Fermoy and is highly regarded especially at Careysville.

The Bride, main Blackwater upstream of Fermoy, and some of the tributaries are more associated with grilse fishing.

The site supports many of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. The bat species Natterer's Bat, Daubenton's Bat, Whiskered Bat, Brown Long-eared Bat and Pipistrelle, can be seen feeding along the river, roosting under the old bridges and in old buildings.

Common Frog, a Red Data Book species that is also legally protected (Wildlife Act, 1976), occurs throughout the site. The rare bush cricket *Metrioptera roselii* (Order Orthoptera) has been recorded in the reed/willow vegetation of the river embankment on the Lower Blackwater River. The Swan Mussel (*Anodonta cygnea*), a scarce species nationally, occurs at a few sites along the freshwater stretches of the Blackwater.

Several bird species listed on Annex I of the E.U. Birds Directive are found on the site. Some use it as a staging area, others are vagrants, while others use it more regularly. Internationally important numbers of Whooper Swan (average peak 174, 1994/95-95/96) and nationally important numbers Bewick's Swan (average peak 5, 1996/97-2000/01) use the Blackwater Callows. Golden Plover occur in regionally important numbers on the Blackwater estuary (average peak 885, 1984/85-86/87) and on the River Bride (absolute maximum 2,141, 1994/95). Staging Terns visit the site annually, with >300 Sandwich Tern and >200 Arctic/Common Tern (average peak 1974-1994). The site also supports populations of the following: Red Throated Diver, Great Northern Diver, Barnacle Goose, Ruff, Wood Sandpiper and Greenland White-fronted Goose. Three breeding territories for Peregrine Falcon are known along the Blackwater Valley. This, the Awbeg and the Bride River are also thought to support at least 30 pairs of Kingfisher. Little Egret breed at the site (12 pairs in 1997, 19 pairs in 1998).

The site holds important numbers of wintering waterfowl. Both the Blackwater Callows and the Blackwater Estuary Special Protection Areas (SPAs) hold internationally important numbers of Black-tailed Godwit (average peak 847, 1994/95-95/96 on the callows, average peak 845, 1974/75-93/94 in the estuary). The Blackwater Callows also hold Wigeon (average peak 2,752), Teal (average peak 1,316), Mallard (average peak 427), Shoveler (average peak 28), Lapwing (average peak 880), Curlew (average peak 416) and Black-headed Gull (average peak 396) (counts from 1994/95-95/96). Numbers of birds using the Blackwater Estuary, given as the mean of the highest monthly maxima over 20 years (1974-94), are Shelduck (137 +10 breeding pairs), Wigeon (780), Teal (280), Mallard (320 + 10 breeding pairs), Goldeneye (11-97), Oystercatcher (340), Ringed Plover (50 + 4 breeding pairs), Grey Plover (36), Lapwing (1,680), Knot (150), Dunlin (2,293), Snipe (272), Black-tailed Godwit (845), Bar-tailed Godwit (130), Curlew (920), Redshank (340), Turnstone (130), Black-headed Gull (4,000) and Lesser Black-backed Gull (172). The greatest numbers (75%) of the wintering waterfowl of the estuary are located in the Kinsalebeg area on the east of the estuary in Co. Waterford. The remainder are concentrated along the Tourig estuary on the Co. Cork side.

The river and river margins also support many Heron, non-breeding Cormorant and Mute Swan (average peak 53, 1994/95-95/96 in the Blackwater Callows). Heron occurs all along the Bride and Blackwater Rivers: 2 or 3 pairs at Dromana Rock; approximately 25 pairs in the woodland opposite; 8 pairs at Ardsallagh Wood and around 20 pairs at Rincrew Wood have been recorded. Some of these are quite large and significant heronries. Significant numbers of Cormorant are found north of the bridge at Youghal and there are some important roosts present at Ardsallagh Wood, downstream of Strancally Castle and at the mouth of the Newport River. Of note are the high numbers of wintering Pochard (e.g. 275 individuals in 1997) found at Ballyhay quarry on the Awbeg, the best site for Pochard in Co. Cork.

Other important species found within the site include Long-eared Owl, which occurs all along the Blackwater River, and Barn Owl, a Red Data Book species, which is found in some old buildings and in Castlehyde, west of Fermoy. Reed Warbler, a scarce breeding species in Ireland, was found for the first time in the site in 1998 at two locations. It is not known whether or not this species breeds on the site, although it breeds nearby to the south of Youghal. Dipper occurs on the rivers.

Land use at the site is mainly centred on agricultural activities. The banks of much of the site and the callows, which extend almost from Fermoy to Cappoquin, are dominated by improved grasslands which are drained and heavily fertilised. These areas are grazed and used for silage production. Slurry is spread over much of this area. Arable crops are also grown. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the populations of E.U. Habitats Directive Annex II animal species within it. Many of the woodlands along the rivers belong to old estates and support many non-native species. Little active woodland management occurs. Fishing is a main tourist attraction along stretches of the Blackwater and its tributaries, and there are a number of angler associations, some with a number of beats. Fishing stands and styles have been erected in places. Both commercial and leisure fishing takes place on the rivers. Other recreational activities such as boating, golfing and walking are also popular. Water skiing is carried out at Villierstown. Parts of Doneraile Park and Anne's Grove are included in the site: both areas are primarily managed for amenity purposes. There is some hunting of game birds and Mink within the site. Ballyhay quarry is still actively quarried for sand and gravel. Several industrial developments, which discharge into the river, border the site. The main threats to the site and current damaging activities include high inputs of nutrients into the river system from agricultural run-off and several sewage plants, dredging of the upper reaches of the Awbeg, over-grazing within the woodland areas, and invasion by non-native species, for example Rhododendron and Cherry Laurel.

Overall, the River Blackwater is of considerable conservation significance for the occurrence of good examples of habitats and populations of plant and animal species that are listed on Annexes I and II of the E.U. Habitats Directive respectively. Furthermore it is of high conservation value for the populations of bird species that use it. Two Special Protection Areas, designated under the E.U. Birds Directive, are also located within the site - Blackwater Callows and Blackwater Estuary. Additionally, the importance of the site is enhanced by the presence of a suite of uncommon plant species.

Version date: 9.2.2016

Appendix C: Conservation Objectives

Conservation Objectives

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

European and national legislation places a collective obligation on Ireland and its citizens to maintain habitats and species in the Natura 2000 network at favourable conservation condition.

The Government and its agencies are responsible for the implementation and enforcement of regulations that will ensure the ecological integrity of these sites. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

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.
- The favourable conservation status of a species is achieved when:
 - population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, 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.

Ballycotton Bay SPA

Ballycotton Bay SPA (004022) Conservation objectives supporting document - [Version 1] 2014

[https://www.npws.ie/sites/default/files/publications/pdf/Ballycotton%20Bay%20SPA%20\(004022\)%20Conservation%20objectives%20supporting%20document%20-%20\[Version%201\].pdf](https://www.npws.ie/sites/default/files/publications/pdf/Ballycotton%20Bay%20SPA%20(004022)%20Conservation%20objectives%20supporting%20document%20-%20[Version%201].pdf)

Objective 1: To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest species listed for Ballycotton Bay SPA.

Anas crecca	[wintering]
Charadrius hiaticula	[wintering]
Pluvialis apricaria	[wintering]
Pluvialis squatarola	[wintering]

<i>Vanellus vanellus</i>	[wintering]
<i>Limosa limosa</i>	[wintering]
<i>Limosa lapponica</i>	[wintering]
<i>Numenius arquata</i>	[wintering]
<i>Arenaria interpres</i>	[wintering]
<i>Larus canus</i>	[wintering]
<i>Larus fuscus</i>	[wintering]

Objective 2: To maintain the favourable conservation condition of the wetland habitat at Ballycotton Bay SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

Ballymacoda Bay SPA

Ballymacoda Bay Special Protection Area (Site Code 4023) Conservation Objectives Supporting Document VERSION 1 National Parks & Wildlife Service May 2014

[https://www.npws.ie/sites/default/files/publications/pdf/Ballymacoda%20Bay%20SPA%20\(004023\)%20Conservation%20objectives%20supporting%20document%20-%20\[Version%20\]_0.pdf](https://www.npws.ie/sites/default/files/publications/pdf/Ballymacoda%20Bay%20SPA%20(004023)%20Conservation%20objectives%20supporting%20document%20-%20[Version%20]_0.pdf)

Objective 1: To maintain the favourable conservation condition of the non-breeding waterbird Special Conservation Interest species listed for Ballymacoda Bay SPA.

<i>Anas penelope</i>	[wintering]
<i>Anas crecca</i>	[wintering]
<i>Charadrius hiaticula</i>	[wintering]
<i>Pluvialis apricaria</i>	[wintering]
<i>Pluvialis squatarola</i>	[wintering]
<i>Vanellus vanellus</i>	[wintering]
<i>Calidris alba</i>	[wintering]
<i>Calidris alpina</i>	[wintering]
<i>Limosa limosa</i>	[wintering]
<i>Limosa lapponica</i>	[wintering]
<i>Numenius arquata</i>	[wintering]
<i>Tringa tetanus</i>	[wintering]
<i>Arenaria interpres</i>	[wintering]
<i>Chroicocephalus ridibundus</i>	[wintering]

<i>Larus canus</i>	[wintering]
<i>Larus fuscus</i>	[wintering]

Objective 2: To maintain the favourable conservation condition of the wetland habitat at Ballymacoda Bay SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

Ballymacoda (Clonpriest and Pillmore) SAC

NPWS (2015) Conservation Objectives: Ballymacoda (Clonpriest and Pillmore)

SAC 000077. Version 2. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

[https://www.npws.ie/sites/default/files/publications/pdf/Ballymacoda%20\(Clonpriest%20and%20Pillmore\)%20SAC%20\(000077\)%20Conservation%20objectives%20supporting%20document%20-%20Coastal%20habitats%20\[Version%201\].pdf](https://www.npws.ie/sites/default/files/publications/pdf/Ballymacoda%20(Clonpriest%20and%20Pillmore)%20SAC%20(000077)%20Conservation%20objectives%20supporting%20document%20-%20Coastal%20habitats%20[Version%201].pdf)

[https://www.npws.ie/sites/default/files/publications/pdf/Ballymacoda%20\(Clonpriest%20and%20Pillmore\)%20SAC%20\(000077\)%20Conservation%20objectives%20supporting%20document%20-%20Marine%20habitats%20\[Version%202\].pdf](https://www.npws.ie/sites/default/files/publications/pdf/Ballymacoda%20(Clonpriest%20and%20Pillmore)%20SAC%20(000077)%20Conservation%20objectives%20supporting%20document%20-%20Marine%20habitats%20[Version%202].pdf)

Conservation Objectives

To maintain the favourable conservation condition of Estuaries in Ballymacoda (Clonpriest and Pillmore) SAC

To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in Ballymacoda (Clonpriest and Pillmore) SAC

To restore the favourable conservation condition of Salicornia and other annuals colonizing mud and sand in Ballymacoda (Clonpriest and Pillmore) SAC

To maintain the favourable conservation condition of Atlantic salt meadows (*Glaucopuccinellietalia maritimae*) in Ballymacoda (Clonpriest and Pillmore) SAC Blackwater Estuary SPA

Blackwater Estuary Special Protection Area

Blackwater Estuary Special Protection Area (Site Code 4028): Conservation Objectives

Supporting Document VERSION 1. National Parks & Wildlife Service, March 2012

https://www.npws.ie/sites/default/files/publications/pdf/4028_Blackwater%20Estuary%20SPA%20Supporting%20Doc_V1.pdf

Objective 1: To maintain the favourable conservation condition of the waterbird Special Conservation Interest species listed for Blackwater Estuary SPA.

<i>Anas penelope</i>	[wintering]
<i>Pluvialis apricaria</i>	[wintering]
<i>Vanellus vanellus</i>	[wintering]
<i>Calidris alpina</i>	[wintering]
<i>Limosa limosa</i>	[wintering]
<i>Limosa lapponica</i>	[wintering]
<i>Numenius arquata</i>	[wintering]
<i>Tringa tetanus</i>	[wintering]

Objective 2: To maintain the favourable conservation condition of the wetland habitat at Blackwater Estuary SPA as a resource for the regularly-occurring migratory waterbirds that utilise it.

Blackwater River (Cork-Waterford) SAC

Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS (2012) Conservation Objectives: Blackwater River (Cork/Waterford) SAC 002170. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

[https://www.npws.ie/sites/default/files/publications/pdf/002170_Blackwater%20River%20\(Cork-Waterford\)%20SAC%20Marine%20Supporting%20Doc_V1.pdf](https://www.npws.ie/sites/default/files/publications/pdf/002170_Blackwater%20River%20(Cork-Waterford)%20SAC%20Marine%20Supporting%20Doc_V1.pdf)

[https://www.npws.ie/sites/default/files/publications/pdf/002170_Blackwater%20River%20\(Cork-Waterford\)%20SAC%20Coastal%20Supporting%20Doc_V1.pdf](https://www.npws.ie/sites/default/files/publications/pdf/002170_Blackwater%20River%20(Cork-Waterford)%20SAC%20Coastal%20Supporting%20Doc_V1.pdf)

Conservation Objectives related to anadromous fish

To restore the favourable conservation condition of Sea Lamprey in the Blackwater River (Cork/Waterford) SAC

To restore the favourable conservation condition of Twaité Shad in the Blackwater River (Cork/Waterford) SAC

To maintain the favourable conservation condition of Atlantic Salmon in the Blackwater River (Cork/Waterford) SAC

Appendix D: Seal Corkscrew Injury Risk Assessment

Table D-1: Risk Assessment Table taken from Statutory Nature Conservation Agencies (SNCAs) Guidance for staff advising on the potential risk of seal corkscrew injuries.

Risk	Recommendations
High	
Activity proposed to take place within 4 nautical miles of a harbour seal SAC and areas where the harbour seal population is in significant decline ¹	<ul style="list-style-type: none"> - Consider alternatives to using ducted propellers or, - Avoid the breeding season - (If avoiding the breeding season or using alternatives to ducted propellers are not possible then a Seal Corkscrew Injury Monitoring Scheme should be considered)
Medium	
Activity proposed to take place between 4 and 30 nautical miles of a harbour seal SAC and not covered above	<ul style="list-style-type: none"> - Consider alternatives to using ducted propellers - Avoid the breeding season if possible
Low	
Activity proposed to take place beyond 30 nm distance from a harbour seal SAC	- None
Activity proposed to take place beyond 4nm distance from a grey seal SAC	- None

¹ Please refer to the most recent report for information pertaining to the current status of seal populations <http://www.smru.st-and.ac.uk/pageset.aspx?psr=41>