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APPROPRIATE ASSESSMENT

STAGE 1 SCREENING

FORGE HILL RECYCLING LTD

FORGE HILL

CORK

Prepared For: -

Forge Hill Recycling Limited,
Forge Hill,
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County Cork.

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Project	Stage 1 Screening Assessment Forge Hill			
Client	Forge Hill Recycling			
Report No.	Date	Status	Prepared By	Reviewed By
1	11/04/2018	Initial Draft Client Review	Conor McGrath MSc	Jim O'Callaghan MSc
	02/05/2018	Final		

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1. INTRODUCTION

Forge Hill Recycling Ltd (FRH) is one of the largest waste management companies in Munster and operates its waste management facility at Forge Hill under planning permission granted by Cork County Council and a Waste Licence issued by the Environmental Protection Agency (EPA).

The current planning permission and waste licence limit the annual waste intake to 82,000 tonnes. FHR intends to apply for planning permission to increase the waste acceptance rate to 100,000 tonnes and this will require planning permission and a revision of the EPA licence.

The European Union (EU) Habitats Directive (92/43/EC) and the EU Birds Directive (2009/147/EC) identify designated areas (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) respectively), are collectively known as European Sites and otherwise as Natura 2000 Sites.

The Habitats Directive, which is implemented under the European Communities Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), requires an "appropriate assessment" of the potential impacts any proposed development that may have an impact on the conservation objectives of any Natura 2000 site.

Article 6(3) of the Directive stipulates that *any plan or project not directly connected with or necessary to the management of a Natura 2000 site, but likely to have a significant effect thereon…shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.*

Guidance documents issued by Department of Environment, Heritage and Local Government (DEHLG) and the National Parks and Wildlife Services (NPWS) recommend that the assessment be completed in a series of Stages, which comprise:

Stage 1: Screening

The purpose of this Stage is to determine, on the basis of a preliminary assessment and objective criteria, whether a plan or project, alone and in combination with other plans or projects, could have significant effects on a Natura 2000 site in respect of the site's conservation objectives.

Stage 2: Appropriate Assessment

This Stage is required if the Stage 1 Screening exercise identifies that the project is likely to have a significant impacts on a Natura 2000 site.

Stage 3: Assessment of Alternative Solutions.

If Stage 2 determines that the project will have an adverse impact upon the integrity of a Natura 2000 site, despite the implementation of mitigation measures, it must be objectively concluded that no alternative solutions exist before the plan can proceed.

Stage 4: Compensatory Measures:

Where no alternative solutions are feasible and where adverse impacts remain but imperative reasons of overriding public interest require the implementation of a project an assessment of compensatory measures that will effectively offset the damage to the Natura 2000 Site is required.

1.1 Methodology

The Screening Assessment was based on a site inspection and the proposed changes to facility operations. It followed the guidance presented The DEHLG (2009, revised February 2010) Appropriate Assessment of Plans and Projects in Ireland and the NPWS (2010) Circular NPW 1/10 & PSSP 2/10 Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities.

The EPA licence specifies the emission control measures that must be implemented to ensure waste activities do not give rise to adverse environmental effects and therefore the consideration of these measures formed an integral part of the screening process.

2. DESCRIPTION OF PROJECT

2.1 Site Location

The facility is located on the southern fringe of Cork City. It is accessed from the Forge Hill Road via a junction on the N27 National Primary Road (Kinsale Road) leading from the N40 Southern Ring Road to Cork Airport.

2.2 Environmental Setting

2.2.1 Hydrology

There are no surface water features either on or immediately adjacent to the site. The site is in the catchment of a small stream to the west of the site, which is a tributary of the Tramore River. The stream rises approximately 2 km south of the site, flows north and passes approximately 140 m to the west of the site and enters the Tramore River, approximately 370 m north of the facility. The Tramore River enters a tidal basin called the Douglas River that subsequently flows into Lough Mahon.

2.2.2 Geology & Hydrogeology

The site is underlain by a layer of made ground, which is on top of approximately 3m of sandstone derived till. The bedrock comprises sandstones, mudstones and siltstone. The subsoils at the site are not significantly water bearing. The bedrock aquifer is classified as a locally important aquifer, which is only moderately productive in local zones (Ll). The aquifer vulnerability rating is Extreme. Based on the topography, the local direction of groundwater flow is to be towards the stream to the west and north of the site.

2.3 Surrounding Land Use

The site is bounded to the north and south by industrial and commercial premises; to the west by Forge Hill Road, with commercial premises on the opposite side of the road. To the east of the site is a field beyond which is the new N27 Kinsale Road.

2.4 Site Layout

The site covers 10,110 m^2 and comprises a waste processing building; two storey office, an electrical substation, a power wash storage hut; two weighbridges and paved open yards

and an unpaved area in the east of the site. A security fence surrounds the operational area and there are two entrances off Forge Hill Road.

2.5 Site Operations

FHR takes in mixed dry recyclables, segregates suitable materials into single waste streams and then bales and stores them prior to transfer to overseas recycling facilities. The processing is highly automated and manual picking is mostly limited to quality control. Non-recyclable residues are sent to other waste management facilities in Ireland for processing to produce solid recovered fuel (SRF).

The current waste acceptance and transfer hours are 06:30 to 23:30 Monday to Friday inclusive, 06:30 to 17:30 Saturdays and 0830 to 17:30 Sundays and Bank Holidays. The operational hours 06:00 and 00:00 Monday to Friday inclusive, 06:00 to 18:00 Saturdays and 08:00 to 18:00 Sundays and Bank Holidays.

2.6 Security

There is a palisade fence around the southern, eastern and western boundary of the operational area with fencing, a block wall and two security gates (north and south) on the western boundary. FHR has installed CCTV surveillance and a monitored alarm system.

2.7 Drainage

2.7.1 Foul Water

Sanitary wastewater from the toilets and waste water from the staff welfare facilities discharge directly to the Irish Water foul sewer. Rainwater run-off from areas of the site where, due to the operations and waste types that were carried out, were susceptible to contamination and directs it to the municipal foul sewer via a Class 1 Oil Interceptor. There is a manual shut-off valve on the foul sewer line just outside the northern exit gate.

2.7.2 Surface Water

Rainwater run-off the paved open yard areas that are not connected to the foul water sewer is directed to a Class I Full Retention Oil interceptor, fitted with an oil alarm, from where it flows to an underground two chamber tank, located in the north west of the site. The water enters the tank's western chamber (82m^3).

Rainwater run-off from the building roofs is piped directly to the western chamber and does not pass through the interceptor. The water in the western chamber is kept at a high level for use for fire-fighting by means of a high level overflow pipe into the eastern chamber (90m^3). This chamber is used for flow attenuation and also serves as a firewater retention facility. A level activated submersible pump is used to control the water level in the

chamber by pumping it out via a rising main to an inspection chamber (SW-1) at the western boundary.

There is a pipe from SW-1 to an unnamed stream to the west of the site. This stream joins the Tramore River, approximately 370m to the north of the site. There is a manual shut off valve on the system at SW-1.

Under normal conditions the roof-water flows directly to the balancing tank, while run-off from the paved areas, other than those connected to the foul sewer, passes through the oil interceptor and into the western chamber. During a heavy rainfall event the water level in the eastern chamber will increase if the inflow rate is higher that the pump capacity. If the tank fills the water will enter an overflow pipe near the top of the chamber. This pipe connects to SW-1.

In the event of an incident that has the potential to contaminate surface water the emergency response actions include switching off the pump in the balancing tank and closure of the valve at SW-1.

2.8 Oil/Chemicals

The diesel powered mobile plant are refuelled on-site as required by tanker fuel delivery trucks. Small quantities of oils such as hydraulic oil (1 No. 205 litre drum) lubricating oils and coolants (5 No. 205 litre drums) for plant maintenance purposes are stored in a bunded pallet inside the power wash storage hut.

2.9 Emissions

The EPA licence requires weekly monitoring of the quality of the surface water discharge to the stream, which is conducted at SW-1. The monitoring includes pH, temperature, conductivity, total organic carbon (TOC), total suspended solids (TSS), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total ammonia, total nitrogen, and mineral oil.

The EPA licence does not specify emission limit values for the discharge, but does stipulate that is should not be of environmental significance. The monitoring results confirms the discharge does not present any environmental risk to the receiving water.

The licence requires weekly monitoring of the emissions to foul sewer to ensure they comply with the specified emission limit values. The monitoring carried out between September 2016 and February 2018 confirm the emission complies with the limit values.

Groundwater quality monitoring is carried out biannually and the results have established that the water quality is goof.

Potential and actual emissions from the facility, in addition to the surface water and foul water discharges, include noise, odour and dust. The routine monitoring carried out in

accordance with the EPA licence conditions has established that site operations noise and dust emissions do not result in nuisance or impairment of amenity outside the site boundary.

2.10 Emergencies

An emergency is an accident/incident that has the potential to result in environmental pollution and harm to human health & safety. The EPA licence requires FHR to ensure that a documented procedure is in place that addresses the hazards on-site, particularly in relation to the prevention of accidents that have a possible impact on the environment.

The licence also requires FHR to ensure that an Emergency Response Procedure (ERP) is in place that addresses any emergency situation that may originate on-site and spill kits are provided in vehicles and at appropriate locations around the facility to quickly contain any spills of potentially polluting liquids.

The EPA licence also requires FHR carry out an Environmental Liability Risk Assessment (ELRA) that assesses the environmental effects accidents and incidents. FHR has completed the ELRA and it established the incident that would have the most significant impact is a fire the waste processing building.

FHR completed a Firewater Retention Assessment to estimate both the volume of firewater run-off that would be generated in the response to a fire and the available retention capacity. The estimated volume of firewater generated is 1126m^3, while the available retention capacity is 1,291m^3.

2.11 Proposed Development

The proposed development involves the expansion of waste acceptance from 82,000 to 100,000 tonnes/year. To accommodate this an extension (1,468m^2) comprising a new additional intake and storage area will be constructed at the north-eastern elevation of the waste processing building. A second, smaller extension (140m^2) to the south-eastern elevation will be built to accommodate possible future reconfigurations of the waste processing equipment.

The construction of the large extension requires the demolition of the power wash hut; the relocation of the eastern boundary fence of the operational area to eastern edge of the landowners holding; the removal of a treeline that is parallel to the fence and paving of the area of disturbed ground (ca 450m^2) between the fence and the property boundary.

All waste acceptance, processing and storage, with the exception of the external storage of a small amount (maximum of 50 tonnes at any one time) of baled metal wastes will continue to be carried out inside the buildings.

Waste acceptance and operations will normally be between 06.00 and 24.00 hours; however on occasion waste may be accepted outside these hours. Waste delivery and

dispatch movements will be spread over the day and will typically be outside the peak traffic hours.

The new intake building will enclose the drains serving the apron in front of the access door on the eastern side to the existing building and the truck/bin wash area. These drains will be sealed. Rainwater run-off from the new paved area in the east of the site will be collected and connected to the drainage system that discharges to the Irish Water foul sewer. Rainwater run-off from the roofs of the extensions will be collected in the surface water drainage system that connects to the flow balancing tank.

To provide a contingency back-up to the oil tanker deliveries it is proposed to provide a 1000 litre plastic, diesel storage tank that will be located in a bund in the south-east of the site. The rainwater run-off from this area will discharge to the foul sewer via the oil interceptor. The hydraulic and lubricating oils and coolants will be stored in a bunded pallet inside the processing building.

3. NATURA 2000 SITES

SACs are selected for the conservation and protection of habitats listed on Annex I and species (other than birds) listed on Annex II of the Habitats Directive, and their habitats. The habitats listed in Annex I require special conservation measures. SPAs are selected for the conservation and protection of bird species listed on Annex I of the Birds Directive and regularly occurring migratory species, and their habitats, particularly wetlands. The selected habitats and species are termed Qualifying Interests

A statement of Conservation Objectives is prepared for each designated site which identifies the qualifying interests or conservation features. The Conservation Objectives are intended to ensure that the relevant habitats and species present on a site are maintained, and where necessary restored, at a Favourable Conservation Status.

Favourable Conservation Status of a habitat, as defined in 2011 Birds and Natural Habitats Regulations, is 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

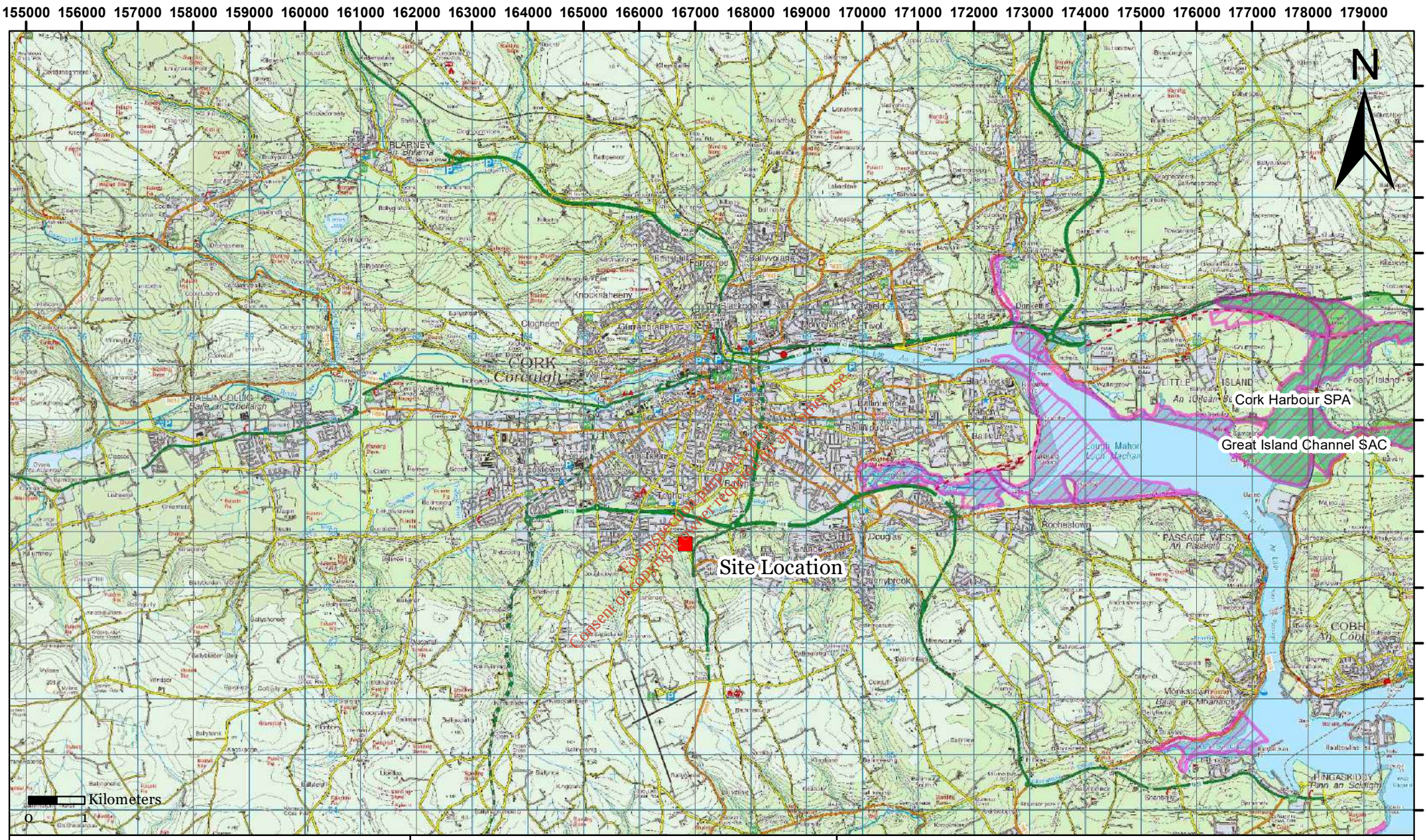
Conservation Status of a species is when:

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

The designated SACs and SPAs within 10km of the site that could potentially be affected by the proposed changes are listed in Table 3 1 and shown on Figure 3.1. Both of the Sites are in Cork Harbour and were selected on the basis that that rainwater run-off from the facility discharges to a tributary of the Tramore River, which flows into Cork Harbour at Lough Mahon.

Table 3.1. Natura 2000 Sites within 10 km of the Greenstar Facility

Site	Code	Distance
SAC		
Great Island Channel	001058	4.5 km East
SPA		
Cork Harbour	004030	3.5 km East



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Environmental Management for Business

CLIENT
Forge Hill Recycling Ltd.

TITLE
Natura 2000 Sites

Details:
- Site Location
- Cork Harbour SPA
- Great Island Channel SAC

Figure 3.1

Cork Harbour SPA

Cork Harbour SPA is a large, sheltered bay system surrounded by the River Lee, Douglas, Owenboy and Owenacurra estuaries. The SPA comprises most of the main intertidal areas of Cork Harbour, including the North Channel, the Douglas River Estuary, Inner Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poulnabibe inlets.

The Site Synopsis for the SPA, listing the full Qualifying Interests, and the Conservation Objectives are in Appendix1 and the information is summarised below.

Qualifying Interests

The listed species are; Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Blacktailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern.

The site is also of special conservation interest for over 20,000 wintering waterbirds. The Birds Directive pays particular attention to wetlands and, as these form part of this SPA, the site and its associated water birds are of special conservation interest for Wetland & Waterbirds.

Conservation Objectives

The conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA and also the wetlands.

3.1 Great Island Channel SAC

The Great Island Channel stretches from Little Island to Midleton, with its southern boundary formed by Great Island. It is an integral part of Cork Harbour, which contains several other sites of conservation interest.

Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. The Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers which provide the main source of freshwater to the North Channel.

The Site Synopsis, which lists the full Qualifying Interests, and the Conservation Objectives are in Appendix 2 and the information is summarised below.

Qualifying Interests

The Great Island Channel; is selected for the following Annex 1 habitats: Sheltered tidal sand and mudflats and Atlantic salt meadows. The site is an integral part of Cork Harbour, which is a wetland of international importance, and is extremely important for wintering waterfowl, containing three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point.

Conservation Objectives

The conservation objectives are to maintain or restore the favorable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the SAC has been selected:

4. LIKELY EFFECTS

4.1 Direct Effects

The Greenstar facility is not located within any designated Natura 2000 Site and therefore the proposed changes will not result in any direct habitat loss or fragmentation of any SPA or SAC

4.2 Indirect Effects

There is the potential for indirect impacts on the Natura 2000 Sites in Cork Harbour, as surface water run-off from the yards and roofs discharges to an unnamed tributary of the Tramore River, which flows into the Harbour at a point 3.5km south of the site.

In addition to the direct pathway to the stream, the local direction of groundwater flow is towards the stream and it is possible that shallow groundwater flows in the area discharges to the watercourse.

4.3 Assessment of Effects

The operational area is extensively developed and almost entirely covered by buildings and paved areas, with the result that it does not support the species for which the nearest Natura 2000 sites were selected.

The site design and method of operation incorporate measures to prevent and mitigate surface water and groundwater contamination. These include oil interceptor on the surface water drains that discharge to the stream; diversion to foul sewer of rainwater from the open yard areas where there is the potential for run-off to become contaminated; impermeable paving across the operational areas; routine integrity surveys of the surface water and foul water drains; the provision of a flow balance tank to regulate the flow to the stream; the installation of shut off valves on the surface water and foul water drains; the provision of firewater retention capacity and the adoption of an emergency response procedures.

The surface and groundwater monitoring required by the EPA licence confirms that the current operation is not affecting surface water and groundwater quality and does not present a risk of pollution to the Tramore River.

5. SCREENING CONCLUSION & STATEMENT

5.1 Conclusion

The proposed changes will not have any direct effects on a Natura 2002 Site. The surface water discharge to the Tramore Stream and possibly groundwater flow are potential pathways for contaminants arising at the site to the Cork Harbour SPA and Lower Channel SAC. The on-going monitoring has confirmed that surface water emissions and groundwater quality is good and do not present a risk to the stream.

The proposed development will not result in any change to the quality of the surface water emission from the site to the tributary of the Tramore River and will not give rise to any new emissions to ground that could affect groundwater quality and therefore will not present a significant risk to the water quality in the stream.

The volume of hazardous substances on site at any one time that have ecotoxic properties (diesel, lubricating oil) is low. This, in conjunction with the preventative and mitigation measures that are already in in place to prevent the contamination of both the stream and ground water associated with an incident and the distance between the facility and Cork Harbour means that any future incidents that may occur would not present a significant risk to the water quality in the stream.

5.2 Statement

The proposed development does not present a risk of significant effects on the Qualifying Interests and Conservation Objectives of either the Lower Channel SAC, or the Cork Harbour SPA.

APPENDIX 1

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National Parks and Wildlife Service

Conservation Objectives Series

Cork Harbour SPA 004030

An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht

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Introduction

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.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

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.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

004030 Cork Harbour SPA

A004	Little Grebe *Tachybaptus ruficollis*
A005	Great Crested Grebe *Podiceps cristatus*
A017	Cormorant *Phalacrocorax carbo*
A028	Grey Heron *Ardea cinerea*
A048	Shelduck *Tadorna tadorna*
A050	Wigeon *Anas penelope*
A052	Teal *Anas crecca*
A054	Pintail *Anas acuta*
A056	Shoveler *Anas clypeata*
A069	Red-breasted Merganser *Mergus serrator*
A130	Oystercatcher *Haematopus ostralegus*
A140	Golden Plover *Pluvialis apricaria*
A141	Grey Plover *Pluvialis squatarola*
A142	Lapwing *Vanellus vanellus*
A149	Dunlin *Calidris alpina alpina*
A156	Black-tailed Godwit *Limosa limosa*
A157	Bar-tailed Godwit *Limosa lapponica*
A160	Curlew *Numenius arquata*
A162	Redshank *Tringa totanus*
A179	Black-headed Gull *Chroicocephalus ridibundus*
A182	Common Gull *Larus canus*
A183	Lesser Black-backed Gull *Larus fuscus*
A193	Common Tern *Sterna hirundo*
A999	Wetlands

Please note that this SPA overlaps with Great Island Channel SAC (001058). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	2014
Title :	Cork Harbour SPA (site code: 4030) Conservation objectives supporting document V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	1985
Title :	Breeding seabirds on the east Cork coastline
Author :	Smiddy, P.
Series :	Cork Bird Report 1984: 46-50
Year :	1995
Title :	Seabird monitoring handbook for Britain and Ireland: a compilation of methods for survey and monitoring of breeding seabirds
Author :	Walsh, P.; Halley, D.J.; Harris, M.P.; del Nevo, A.; Sim, I.M.W.; Tasker, M.L.
Series :	JNCC, Peterborough
Year :	1996
Title :	Handbook of birds of the world volume 3: hoatzin to auks
Author :	del Hoyo, J.; Elliott, A.; Sargatal, J.
Series :	Lynx Edicions, Barcelona
Year :	2000
Title :	Common terns *Sterna hirundo* nesting on Cork Harbour
Author :	Wilson, J.; O'Mahony, B.; Smiddy, P.
Series :	Irish Birds Vol. 6(4)
Year :	2014
Title :	Seabird Monitoring Programme (SMP) Database
Author :	JNCC
Series :	http://jncc.defra.gov.uk/smp/Default.aspx
Year :	2014
Title :	BirdLife International Seabird Ecology and Foraging Range Database
Author :	BirdLife International
Series :	http://seabird.wikispaces.com
Year :	2014
Title :	Chapter 15 in: Ringaskiddy Port Redevelopment. Environmental Impact Statement
Author :	RPS
Series :	Report to Port of Cork

A004 Little Grebe *Tachybaptus ruficollis*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by little grebe, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A005 Great Crested Grebe *Podiceps cristatus*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by great crested grebe, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A017 Cormorant *Phalacrocorax carbo*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by cormorant, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A028 Grey Heron *Ardea cinerea*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by grey heron, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A048 Shelduck *Tadorna tadorna*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by shelduck, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A050 Wigeon *Anas penelope*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by wigeon, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A052 Teal *Anas crecca*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by teal, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A054 Pintail *Anas acuta*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by pintail, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A056 Shoveler *Anas clypeata*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by shoveler, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A069 Red-breasted Merganser *Mergus serrator*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by red-breasted merganser, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A130 Oystercatcher *Haematopus ostralegus*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing and intensity of use of areas by oystercatcher, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part four of the conservation objectives supporting document

A140 Golden Plover *Pluvialis apricaria*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by golden plover, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A141 Grey Plover *Pluvialis squatarola*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by grey plover, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A142 Lapwing *Vanellus vanellus*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by lapwing, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives

A149 Dunlin *Calidris alpina alpina*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by dunlin, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A156 Black-tailed Godwit *Limosa limosa*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by black-tailed godwit, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A157 Bar-tailed Godwit *Limosa lapponica*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by bar-tailed godwit, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A160 Curlew *Numenius arquata*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by curlew, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A162 Redshank *Tringa totanus*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by redshank, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A164 Greenshank *Tringa nebularia*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by greenshank, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part four of the conservation objectives supporting document

A179 Black-headed Gull *Chroicocephalus ridibundus*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by black-headed gull other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A182 Common Gull *Larus canus*

To maintain the favourable conservation condition of Common Gull in Cork Harbour SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by common gull, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A183 Lesser Black-backed Gull *Larus fuscus*

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

Attribute	Measure	Target	Notes
Population trend	Percentage change	Long term population trend stable or increasing	Waterbird population trends are presented in part four of the conservation objectives supporting document
Distribution	Range, timing and intensity of use of areas	No significant decrease in the range, timing or intensity of use of areas by lesser black-backed gull, other than that occurring from natural patterns of variation	Waterbird distribution from the 2010/2011 waterbird survey programme is discussed in part five of the conservation objectives supporting document

A193 Common Tern *Sterna hirundo*

To maintain the favourable conservation condition of Common Tern in Cork Harbour SPA, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Breeding population abundance: apparently occupied nests (AONs)	Number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). Wilson et al. (2000) provides background summary population information for the Cork Harbour area. In 2012 the total population of common terns that nested within the wider Cork Harbour was between 85 and 95 pairs, a proportion of which now breeds outside the SPA (RPS, 2014)
Productivity rate: fledged young per breeding pair	Mean number	No significant decline	Measure based on standard tern survey methods (see Walsh et al., 1995). The Seabird Monitoring Programme (SMP) (JNCC, 2014) provides population data for this species
Distribution: breeding colonies	Number; location; area (hectares)	No significant decline	Common tern breeding colonies can be sited in both coastal and inland areas using a wide variety of habitats including sandy, rocky or well-vegetated islands in estuaries, lakes and rivers. This species can also use artificial substrates (Del Hoyo et al., 1996). First recorded nesting in saltmarsh in 1969-70 (Smiddy, 1985), the colony now largely breeds on artificial structures in at least two locations (see Wilson et al., 2000 and RPS, 2014)
Prey biomass available	Kilogrammes	No significant decline	Key prey items: Small fish, crustaceans, insects and occasionally squid. Key habitats: common tern forage in/over shallow coastal waters, bays, inlets, shoals, tidal-rips, drift lines, beaches, saltmarsh creeks, lakes, ponds or rivers. Foraging range: max. 37km, mean max. 33.81km, mean 8.67km (Birdlife International Seabird Database (Birdlife International, 2014))
Barriers to connectivity	Number; location; shape; area (hectares)	No significant increase	Seabird species can make extensive use of marine waters adjacent to their breeding colonies. Foraging range: max. 37km, mean max. 33.81km, mean 8.67km (BirdLife International Seabird Database (Birdlife International, 2014))
Disturbance at the breeding site	Level of impact	Human activities should occur at levels that do not adversely affect the breeding common tern population	In the Cork Harbour area, this species largely breeds on artificial structures (see Wilson et al., 2000 and RPS, 2014)

Conservation Objectives for : Cork Harbour SPA [004030]

A999 Wetlands

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

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 2,587 hectares, other than that occurring from natural patterns of variation	The wetland habitat area was estimated as 2,587ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document

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MAP 1:
CORK HARBOUR SPA
CONSERVATION OBJECTIVES
SPA DESIGNATION

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 004030; version 2.04. CO. CORK

0 1 2 3 4 km

The mapped boundaries are of an indicative and general nature only. Boundaries of designated areas are subject to revision.
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Níl sna teorainneacha ar na léarscáileanna ach nod garshuiomhach ginearálta. Féadfar athbhreithnithe a déanamh ar theorainneacha na gceantar comharthaithe.
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N

Map Version 1
Date: Dec 2014

SPA 004030

SPA 004030

SAC 001058

SPA 004030

SPA 004030

SPA 004030

SPA 004030

SPA 004030

Legend

- Cork Harbour SPA 004030
- Great Island Channel SAC 001058
- OSi Discovery Series County Boundary

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MAP 2:
CORK HARBOUR SPA
CONSERVATION OBJECTIVES
ADJOINING / OVERLAPPING DESIGNATIONS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 001058; version 3.
SPA 004030; version 2.04. CO. CORK

0 1 2 3 km

N

Map Version 1
Date: Dec 2014

SITE SYNOPSIS

SITE NAME: CORK HARBOUR SPA

SITE CODE: 004030

Cork Harbour is a large, sheltered bay system, with several river estuaries - principally those of the Rivers Lee, Douglas, Owenboy and Owennacurra. The SPA site comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay, Ringabella Creek and the Rostellan and Poulnabibe inlets.

Owing to the sheltered conditions, the intertidal flats are often muddy in character. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nepthys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algae species occur on the flats, especially *Ulva* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially where good shelter exists, such as at Rossleague and Belvelly in the North Channel. Salt marshes are scattered through the site and these provide high tide roosts for the birds. Some shallow bay water is included in the site. Rostellan Lake is a small brackish lake that is used by swans throughout the winter. The site also includes some marginal wet grassland areas used by feeding and roosting birds.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Little Grebe, Great Crested Grebe, Cormorant, Grey Heron, Shelduck, Wigeon, Teal, Mallard, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Redshank, Greenshank, Black-headed Gull, Common Gull, Lesser Black-backed Gull and Common Tern. 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.

Cork Harbour is an internationally important wetland site, regularly supporting in excess of 20,000 wintering waterfowl. Of particular note is that the site supports internationally important populations of Black-tailed Godwit (1,896) and Redshank (2,149) - all figures given are five year mean peaks for the period 1995/96 to 1999/2000. Nationally important populations of the following 19 species occur: Little Grebe (57), Great Crested Grebe (253), Cormorant (521), Grey Heron (80), Shelduck (2,009), Wigeon (1,791), Teal (1,065), Mallard (513), Pintail (57), Shoveler (103), Red-breasted Merganser (121), Oystercatcher (1,809), Golden Plover (3,342), Grey Plover (95), Lapwing (7,569), Dunlin (9,621), Bar-tailed Godwit (233), Curlew (2,237) and Greenshank (46). The Shelduck population is the largest in the country (over 10% of national total). Other species using the site include Mute Swan (38), Whooper Swan (5), Pochard (72), Gadwall

(6), Tufted Duck (64), Goldeneye (21), Coot (53), Ringed Plover (73), Knot (26) and Turnstone (113). Cork Harbour is an important site for gulls in winter and autumn, especially Black-headed Gull (3,640), Common Gull (1,562) and Lesser Black-backed Gull (783), all of which occur in numbers of national importance. Little Egret and Mediterranean Gull, two species which have recently colonised Ireland, also occur at this site.

A range of passage waders occurs regularly in autumn, including such species as Ruff (5-10), Spotted Redshank (1-5) and Green Sandpiper (1-5). Numbers vary between years and usually a few of each of these species over-winter.

Cork Harbour has a nationally important breeding colony of Common Tern (102 pairs in 1995). The birds have nested in Cork Harbour since about 1970, and since 1983 on various artificial structures, notably derelict steel barges and the roof of a Martello Tower. The birds are monitored annually and the chicks are ringed.

Cork Harbour is of major ornithological significance, being of international importance both for the total numbers of wintering birds (i.e. > 20,000) and also for its populations of Black-tailed Godwit and Redshank. In addition, it supports nationally important wintering populations of 22 species, as well as a nationally important breeding colony of Common Tern. Several of the species which occur regularly are listed on Annex I of the E.U. Birds Directive, i.e. Whooper Swan, Little Egret, Golden Plover, Bar-tailed Godwit, Ruff, Mediterranean Gull and Common Tern. The site provides both feeding and roosting sites for the various bird species that use it. Cork Harbour is also a Ramsar Convention site and part of Cork Harbour SPA is a Wildfowl Sanctuary.

21.1.2015

APPENDIX 2

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National Parks and Wildlife Service

Conservation Objectives Series

Great Island Channel SAC 001058

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Department of
Arts, Heritage and the Gaeltacht

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Introduction

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.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site.

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.

Notes/Guidelines:

1. The targets given in these conservation objectives are based on best available information at the time of writing. As more information becomes available, targets for attributes may change. These will be updated periodically, as necessary.
2. An appropriate assessment based on these conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.
3. Assessments cannot consider an attribute in isolation from the others listed for that habitat or species, or for other habitats and species listed for that site. A plan or project with an apparently small impact on one attribute may have a significant impact on another.
4. Please note that the maps included in this document do not necessarily show the entire extent of the habitats and species for which the site is listed. This should be borne in mind when appropriate assessments are being carried out.
5. When using these objectives, it is essential that the relevant backing/supporting documents are consulted, particularly where instructed in the targets or notes for a particular attribute.

Qualifying Interests

**** indicates a priority habitat under the Habitats Directive***

001058	Great Island Channel SAC
1140	Mudflats and sandflats not covered by seawater at low tide
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

Please note that this SAC overlaps with Cork Harbour SPA (004030). See map 2. The conservation objectives for this site should be used in conjunction with those for the overlapping site as appropriate.

Supporting documents, relevant reports & publications

Supporting documents, NPWS reports and publications are available for download from: www.npws.ie/Publications

NPWS Documents

Year :	2006
Title :	A survey of intertidal mudflats and sandflats in Ireland
Author :	Aquafact
Series :	Unpublished report to NPWS
Year :	2009
Title :	Saltmarsh monitoring project 2007-2008
Author :	McCorry, M.; Ryle, T.
Series :	Unpublished report to NPWS
Year :	2014
Title :	Great Island Channel SAC (site code:1058) Conservation objectives supporting document-coastal habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document
Year :	2014
Title :	Great Island Channel SAC (site code:1058) Conservation objectives supporting document-marine habitats V1
Author :	NPWS
Series :	Conservation objectives supporting document

Other References

Year :	1998
Title :	The saltmarshes of Ireland: an inventory and account of their geographical variation
Author :	Curtis, T.G.F.; Sheehy Skeffington, M.J.
Series :	Biology and Environment, Proceedings of the Royal Irish Academy 98B: 87-104
Year :	2012
Title :	Benthic sampling of water bodies of County Cork under the Water Framework Directive
Author :	EcoServe
Series :	Report to the Marine Institute
Year :	2012
Title :	Intertidal benthic survey of Great Island Channel SAC and Cork Harbour SPA
Author :	MERC
Series :	Unpublished report to the Marine Institute and NPWS

Spatial data sources

Year :	Interpolated 2014
Title :	Intertidal surveys 2006, 2011; subtidal survey 2011
GIS Operations :	Polygon feature classes from marine community types base data sub-divided based on interpolation of marine survey data. Expert opinion used as necessary to resolve any issues arising
Used For :	1140, Marine community types (maps 3 and 4)
Year :	2005
Title :	OSi Discovery series vector data
GIS Operations :	High water mark (HWM) and low water mark (LWM) polyline feature classes converted into polygon feature classes and combined; EU Annex I Saltmarsh and Coastal data erased out if present
Used For :	Marine community types base data (map 4)
Year :	Revision 2010
Title :	Saltmarsh Monitoring Project 2007-2008. Version 1
GIS Operations :	QIs selected; clipped to SAC boundary; overlapping regions with Coastal CO data investigated and resolved with expert opinion used
Used For :	1330 (map 5)

Conservation Objectives for : Great Island Channel SAC [001058]

1140 Mudflats and sandflats not covered by seawater at low tide

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

Attribute	Measure	Target	Notes
Habitat area	Hectares	The permanent habitat area is stable or increasing, subject to natural processes. See map 3	Habitat area was estimated using as 723ha using OSi data
Community distribution	Hectares	Conserve the following community type in a natural condition: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex. See map 4	Based on intertidal and subtidal surveys undertaken in 2006 (Aquafact, 2007) and 2011 (EcoServe, 2012; MERC, 2012). See marine supporting document for further information

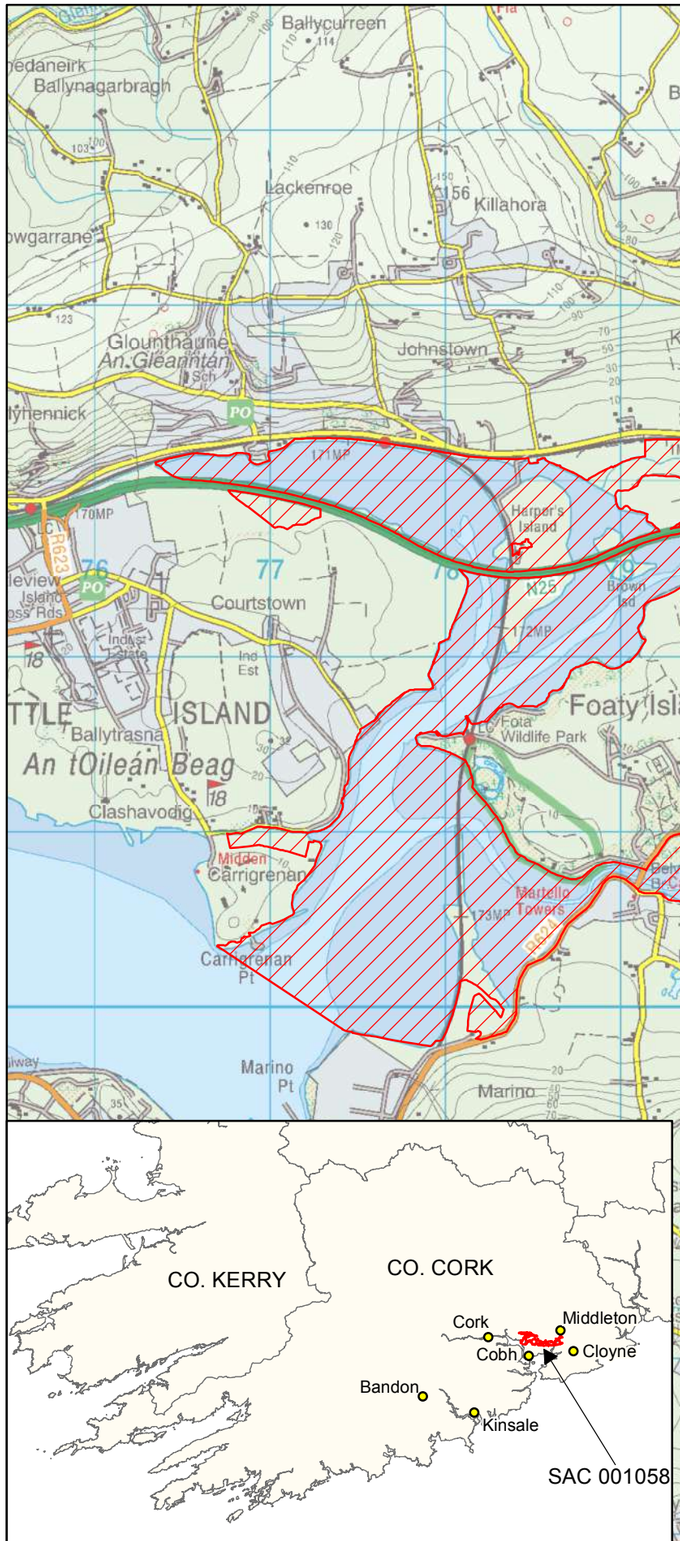
Conservation Objectives for : Great Island Channel SAC [001058]

1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

To restore the favourable conservation condition of Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) in Great Island Channel SAC, which is defined by the following list of attributes and targets:

Attribute	Measure	Target	Notes
Habitat area	Hectares	Area stable or increasing, subject to natural processes, including erosion and succession. For sub-sites mapped: Bawnard - 0.29ha; Carrigatohil - 1.01ha. See map 5	Based on data from Saltmarsh Monitoring Project (SMP) (McCorry and Ryle, 2009). Two sub-sites that supported Atlantic salt meadow were mapped (1.30ha) and additional areas of potential saltmarsh (17.60ha) were identified from an examination of aerial photographs, giving a total estimated area of 18.90ha. Saltmarsh habitat has also been recorded at two other sub-sites within the SAC (Curtis and Sheehy Skeffington, 1998). NB further unsurveyed areas maybe present within the SAC. See coastal habitats supporting document for further details
Habitat distribution	Occurrence	No decline or change in habitat distribution, subject to natural processes. See map 5 for known distribution	Based on data from McCorry and Ryle (2009). Within the sites surveyed by the SMP, estuary type saltmarsh over a mud substrate is most common and ASM is the dominant saltmarsh habitat. NB further unsurveyed areas maybe present within the SAC. See coastal habitats supporting document for further details
Physical structure: sediment supply	Presence/ absence of physical barriers	Maintain/restore natural circulation of sediments and organic matter, without any physical obstructions	Based on data from McCorry and Ryle (2009). At Bawnard there is a seawall that was constructed in the 18th-19th centuries. At Carrigatohil the northern and eastern shorelines have been significantly modified by road construction. Part of the saltmarsh has also been infilled. See coastal habitats supporting document for further details
Physical structure: creeks and pans	Occurrence	Maintain/restore creek and pan structure, subject to natural processes, including erosion and succession	Based on data from McCorry and Ryle (2009). The ASM at Carrigatohil is poorly developed, though some of the larger sections contain salt pans. The smaller sections, however, tend to be quite uniform in topography. The saltmarsh topography at Bawnard is poorly developed with few typical saltmarsh features. See coastal habitats supporting document for further details
Physical structure: flooding regime	Hectares flooded; frequency	Maintain natural tidal regime	Based on data from McCorry and Ryle (2009). At Bawnard, the entire bay empties at low tide to expose soft intertidal mudflats. See coastal habitats supporting document for further details
Vegetation structure: zonation	Occurrence	Maintain range of coastal habitats including transitional zones, subject to natural processes including erosion and succession	Based on data from McCorry and Ryle (2009). Zonations to *Salicornia* flats and intertidal mudflats occurs at Carrigatohil. At Bawnard, there is succession from saltmarsh to brackish saltmarsh and wet grassland as well as zonation to intertidal mudflats at the lower saltmarsh boundary. See coastal habitats supporting document for further details
Vegetation structure: vegetation height	Centimetres	Maintain structural variation within sward	Based on data from McCorry and Ryle (2009). At Carrigatohil, the sward height is quite tall due to lack of grazing. At Bawnard only part of the site is grazed. See coastal habitats supporting document for further details
Vegetation structure: vegetation cover	Percentage cover at a representative number of monitoring stops	Maintain more than 90% area outside creeks vegetated	Based on data from McCorry and Ryle (2009). Some poaching was noted in places at Bawnard. See coastal habitats supporting document for further details
Vegetation composition: typical species and sub-communities	Percentage cover at a representative number of monitoring stops	Maintain range of sub-communities with typical species listed in SMP (McCorry and Ryle, 2009)	See coastal habitats supporting document for further details

Vegetation structure: negative indicator species - *Spartina anglica*	Hectares	No significant expansion of common cordgrass (*Spartina anglica*), with an annual spread of less than 1% where it is known to occur	Based on data from McCorry and Ryle (2009). *Spartina* occurs at both sub-sites in this SAC. See coastal habitats supporting document for further details



Legend

Great Island Channel SAC 001058

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Department of Arts, Heritage and the Gaeltacht

MAP 1: GREAT ISLAND CHANNEL SAC CONSERVATION OBJECTIVES SAC DESIGNATION

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE: SAC 001058; version 3. CO. CORK

0 0.5 1 1.5 2 km

N

Map Version 1
Date: June 2014

SAC 001058

SPA 004030

Legend

- Great Island Channel SAC 001058
- Cork Harbour SPA 004030
- OSi Discovery Series County Boundary

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MAP 2:
GREAT ISLAND CHANNEL SAC CONSERVATION OBJECTIVES ADJOINING / OVERLAPPING DESIGNATIONS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 001058; version 3.
SPA 004030; version 2.04. CO. CORK

0 1 2 3 km

N

Map Version 1
Date: June 2014

Legend

- Great Island Channel SAC 001058
- 1140 Mudflats and sandflats not covered by sea water at low tide
- OSi Discovery Series County Boundary

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MAP 3:
GREAT ISLAND CHANNEL SAC
CONSERVATION OBJECTIVES
TIDAL MUDFLATS AND SANDFLATS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 001058; version 3. CO. CORK

0 0.5 1 1.5 2 km

N

Map Version 1
Date: June 2014

Legend

Great Island Channel SAC 001058

OSi Discovery Series County Boundary

Marine Community Types

Mixed sediment to sandy mud with polychaetes and oligochaetes community complex

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MAP 4:
GREAT ISLAND CHANNEL SAC
CONSERVATION OBJECTIVES
MARINE COMMUNITY TYPES

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
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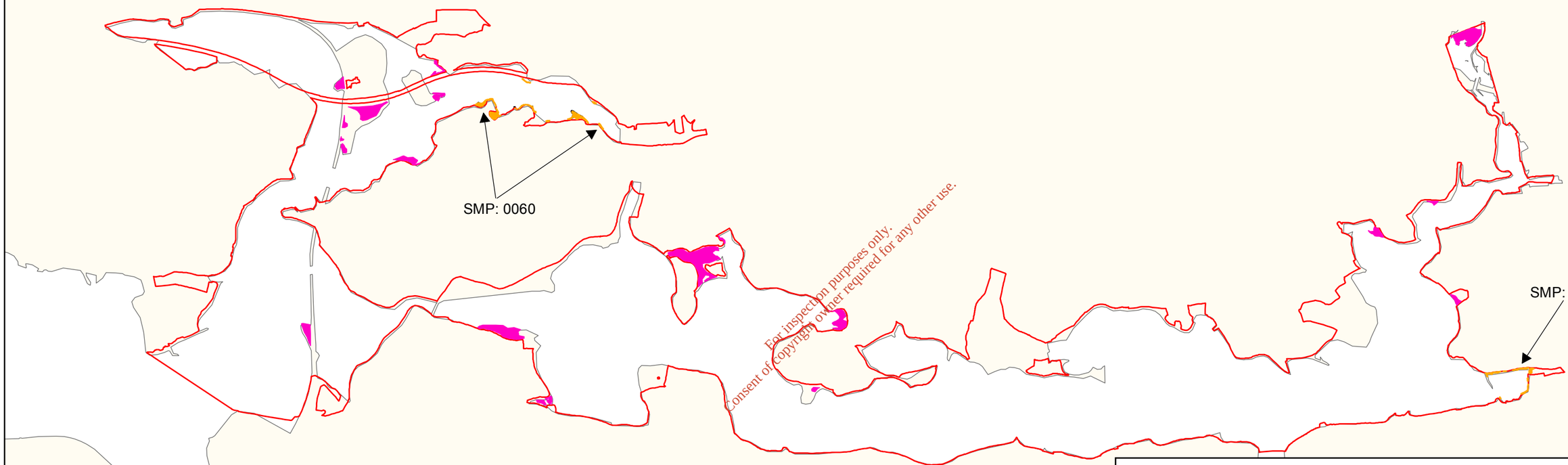
0 0.5 1 1.5 2 km

N

Map Version 1
Date: June 2014



Legend

- Great Island Channel SAC 001058
- OSi Discovery Series County Boundary
- SMP: 0057 Saltmarsh Monitoring Project Site Codes

Saltmarsh Habitats

Qualifying Interests

- 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)
- Potential 1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae)

Non-Qualifying Interests

- 1310 *Salicornia* and other annuals colonising mud and sand

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MAP 5:
GREAT ISLAND CHANNEL SAC
CONSERVATION OBJECTIVES
SALTMARSH HABITATS

Map to be read in conjunction with the NPWS Conservation Objectives Document.

SITE CODE:
SAC 001058; version 3. CO. CORK

0 0.5 1 1.5 2 km

N

Map Version 1
Date: June 2014

SITE SYNOPSIS

Site Name: Great Island Channel SAC

Site Code: 001058

The Great Island Channel stretches from Little Island to Midleton, with its southern boundary being formed by Great Island. It is an integral part of Cork Harbour which contains several other sites of conservation interest. Geologically, Cork Harbour consists of two large areas of open water in a limestone basin, separated from each other and the open sea by ridges of Old Red Sandstone. Within this system, Great Island Channel forms the eastern stretch of the river basin and, compared to the rest of Cork Harbour, is relatively undisturbed. Within the site is the estuary of the Owennacurra and Dungourney Rivers. These rivers, which flow through Midleton, provide the main source of freshwater to the North Channel.

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):

[1140] Tidal Mudflats and Sandflats
[1330] Atlantic Salt Meadows

The main habitats of conservation interest in Great Island Channel SAC are the sheltered tidal sand and mudflats and the Atlantic salt meadows. Owing to the sheltered conditions, the intertidal flats are composed mainly of soft muds. These muds support a range of macro-invertebrates, notably *Macoma balthica*, *Scrobicularia plana*, *Hydrobia ulvae*, *Nepthys hombergi*, *Nereis diversicolor* and *Corophium volutator*. Green algal species occur on the flats, especially *Ulva lactua* and *Enteromorpha* spp. Cordgrass (*Spartina* spp.) has colonised the intertidal flats in places, especially at Rossleague and Belvelly.

The saltmarshes are scattered through the site and are all of the estuarine type on mud substrate. Species present include Sea Purslane (*Halimione portulacoides*), Sea Aster (*Aster tripolium*), Thrift (*Armeria maritima*), Common Saltmarsh-grass (*Puccinellia maritima*), Sea Plantain (*Plantago maritima*), Greater Sea-spurrey (*Spergularia media*), Lax-flowered Sea-lavender (*Limonium humile*), Sea Arrowgrass (*Triglochin maritimum*), Sea Mayweed (*Matricaria maritima*) and Red Fescue (*Festuca rubra*).

The site is extremely important for wintering waterfowl and is considered to contain three of the top five areas within Cork Harbour, namely North Channel, Harper's Island and Belvelly-Marino Point. Shelduck is the most frequent duck species with 800-1,000 birds centred on the Fota/Marino Point area. There are also large flocks of Teal and Wigeon, especially at the eastern end. Waders occur in the greatest density

north of Rosslare, with Dunlin, Godwit, Curlew and Golden Plover the commonest species. A population of about 80 Grey Plover is a notable feature of the area. All the mudflats support feeding birds; the main roost sites are at Weir Island and Brown Island, and to the north of Fota at Killacloyne and Harper's Island. Ahanesk supports a roost also but is subject to disturbance. The numbers of Grey Plover and Shelduck, as given above, are of national importance.

The site is an integral part of Cork Harbour which is a wetland of international importance for the birds it supports. Overall, Cork Harbour regularly holds over 20,000 waterfowl and contains internationally important numbers of Black-tailed Godwit (1,181) and Redshank (1,896), along with nationally important numbers of nineteen other species. Furthermore, it contains large Dunlin (12,019) and Lapwing (12,528) flocks. All counts are average peaks, 1994/95 – 1996/97. Much of the site falls within Cork Harbour Special Protection Area, an important bird area designated under the E.U. Birds Directive.

While the main land use within the site is aquaculture (oyster farming), the greatest threats to its conservation significance come from road works, infilling, sewage outflows and possible marina developments.

The site is of major importance for the two habitats listed on Annex I of the E.U. Habitats Directive, as well as for its important numbers of wintering waders and wildfowl. It also supports a good invertebrate fauna.