

NPWS

**Great Island Channel SAC
(site code: 1058)**

**Conservation objectives supporting document -
Marine Habitats**

**Version 1
May 2014**

Introduction

Great Island Channel SAC is designated for the marine Annex I qualifying interest of Mudflats and sandflats not covered by seawater at low tide (Figure 1).

Intertidal surveys carried out in 2006 and 2011 (Aquafact, 2006; MERC, 2012); a subtidal survey, as part of a Water Framework Directive (WFD) assessment, was undertaken by the Marine Institute in 2011 (EcoServe, 2012). These data were used to determine the physical and biological nature of this SAC and overlapping Special Protection Areas of Cork Harbour SPA (site code 4030).

Aspects of the biology and ecology of the Annex I habitat are provided in Section 1. The corresponding site-specific conservation objective will facilitate Ireland delivering on its surveillance and reporting obligations under the EU Habitats Directive (92/43/EC).

Ireland also has an obligation to ensure that consent decisions concerning operations/activities planned for Natura 2000 sites are informed by an appropriate assessment where the likelihood of such operations or activities having a significant effect on the site cannot be excluded. Further ancillary information concerning the practical application of the site-specific objective and targets in the completion of such assessments is provided in Section 2.

Section 1

Principal Benthic Communities

Within the Great Island Channel SAC and the overlapping SPA, a single community type is recorded; a description of this community type is given below.

Estimated area of this community type within the Annex I habitat, based on interpolation, is given in the objective targets in Section 2.

The development of a community complex target arises when an area possesses similar abiotic features but records a number of biological communities that are not regarded as being sufficiently stable and/or distinct temporally or spatially to become the focus of conservation efforts. In this case, examination of the available data from Great Island Channel identified a number of biological communities whose species composition overlapped significantly. Such biological communities are grouped together into what experts consider are sufficiently stable units (i.e. a complex) for conservation targets.

MIXED SEDIMENT TO SANDY MUD WITH POLYCHAETES AND OLIGOCHAETES COMMUNITY COMPLEX

The community complex is recorded throughout the intertidal and into the shallow subtidal at this site (Figure 2).

While the substrate is variable within the complex, silt-clay represents the major proportion of the fractions over most of the area (ranging from 20.6% to 96%). In the north-east of the site, at Midleton and Ballynacorra, and in the north-west, at Glounthaune, the sediment is mixed with gravel ranging from 5.4% to 74.4% compared to 0.0% to 3.5% elsewhere.

The distinguishing species of this community complex are the polychaetes *Hediste diversicolor* and *Nephtys hombergii* and the oligochaetes *Tubificoides benedii*. Other species recorded here include the gastropod *Peringia ulvae* and the bivalve *Scrobicularia plana*.

H. diversicolor is recorded in high abundance on the shore in Midleton and near Ballynacorra and occurs in moderate numbers at the west of the SAC, north of Little Island and east of Foaty Island. *T. benedii* is similarly found in high abundance near Ballynacorra and also north of Great Island. It is recorded in low abundances elsewhere within the complex. *Nephtys hombergii* is present in low numbers within the complex, except on the north shore of Great Island where it is recorded in moderate abundances.

P. ulvae is recorded in moderate abundances between Weir Island and Foaty (Fota) Island. *Scrobicularia plana* is not uniformly distributed within the complex; it is recorded in high

abundance west of the Martello tower on Great Island; it is absent or occurs in low abundances elsewhere within the complex.

The polychaete *Arenicola marina* is recorded in low numbers ($2m^{-2}$) on the mid shore east off Brown Island.

Distinguishing species of Mixed sediment to sandy mud with polychaetes and oligochaetes community complex	
<i>Hediste diversicolor</i>	<i>Tubificoides benedii</i>
<i>Nephtys hombergii</i>	<i>Scrobicularia plana</i>
<i>Peringia ulvae</i>	

Table 1 Distinguishing species of Mixed sediment to sandy mud with polychaetes and oligochaetes community complex.

Section 2

Appropriate Assessment Notes

Many operations/activities of a particular nature and/or size require the preparation of an environmental impact statement of the likely effects of their planned development. While smaller operations/activities (i.e. sub threshold developments) are not required to prepare such statements, an appropriate assessment and Natura Impact Statement is required to inform the decision-making process in or adjacent to Natura 2000 sites. The purpose of such an assessment is to record in a transparent and reasoned manner the likely effects on a Natura 2000 site of a proposed development. General guidance on the completion of such assessments has been prepared and is available at www.npws.ie.

Annex I Habitats

It is worth considering at the outset that in relation to Annex I habitat structure and function, the extent and quality of all habitats varies considerably in space and time and marine habitats are particularly prone to such variation. Habitats which are varying naturally, i.e. biotic and/or abiotic variables are changing within an envelope of natural variation, must be considered to have favourable conservation condition. Anthropogenic disturbance may be considered significant when it causes a change in biotic and/or abiotic variables in excess of what could reasonably be envisaged under natural processes. The capacity of the habitat to recover from this change is obviously an important consideration (i.e. habitat resilience) thereafter.

This Department has adopted a prioritized approach to conservation of structure and function in marine Annex I habitats.

1. Those communities that are key contributors to overall biodiversity at a site by virtue of their structure and/or function (keystone communities) and their low resilience should be afforded the highest degree of protection and any significant anthropogenic disturbance should be avoided.
2. In relation to the remaining constituent communities that are structurally important (e.g. broad sedimentary communities) within an Annex I marine habitat, there are two considerations.
 - 2.1. Significant anthropogenic disturbance may occur with such intensity and/or frequency as to effectively represent a continuous or ongoing source of disturbance over time and space (e.g. effluent discharge within a given area). Drawing from the principle outlined in the European Commission's Article 17 reporting framework that disturbance of greater than 25% of the area of an Annex I habitat represents unfavourable conservation status, this Department takes the view that licensing of activities likely to cause continuous disturbance of each community type should not exceed an approximate area of 15%. Thereafter, an increasingly cautious approach

is advocated. Prior to any further licensing of this category of activities, an inter-Departmental management review (considering *inter alia* robustness of available scientific knowledge, future site requirements, etc) of the site is recommended.

- 2.2. Some activities may cause significant disturbance but may not necessarily represent a continuous or ongoing source of disturbance over time and space. This may arise for intermittent or episodic activities for which the receiving environment would have some resilience and may be expected to recover within a reasonable timeframe relative to the six-year reporting cycle (as required under Article 17 of the Directive). This Department is satisfied that such activities could be assessed in a context-specific manner giving due consideration to the proposed nature and scale of activities during the reporting cycle and the particular resilience of the receiving habitat in combination with other activities within the designated site.

The following technical clarification is provided in relation to specific conservation objectives and targets for Annex I habitats to facilitate the appropriate assessment process:

Objective **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.**

Target 1 The permanent habitat area is stable or increasing, subject to natural processes.

- This target refers to activities or operations that propose to permanently remove habitat from a site, thereby reducing the permanent amount of habitat area. It does not refer to long or short term disturbance of the biology of a site.
- Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 2 Conserve the following community type in a natural condition: Mixed sediment to sandy mud with polychaetes and oligochaetes community complex.

- A semi-quantitative description of this community type has been provided in Section 1.
- An interpolation of its likely distribution is provided in figure 2.
- The estimated area of this community type within the Mudflats and sandflats not covered by seawater at low tide habitat given below is based on spatial interpolation and therefore should be considered indicative:
 - Mixed sediment to sandy mud with polychaetes and oligochaetes community complex - 723ha
- Significant continuous or ongoing disturbance of communities should not exceed an approximate area of 15% of the interpolated area of each community type, at

which point an inter-Departmental management review is recommended prior to further licensing of such activities.

- Proposed activities or operations that cause significant disturbance to communities but may not necessarily represent a continuous or ongoing source of disturbance over time and space may be assessed in a context-specific manner giving due consideration to the proposed nature and scale of activities during the reporting cycle and the particular resilience of the receiving habitat in combination with other activities within the designated site.

Bibliography:

Aquafact (2006). A survey of Intertidal mudflats and sandflats in Ireland. Produced by Aquafact on behalf of the National Parks & Wildlife Service.

EcoServe (2012). Benthic Sampling of Water Bodies of County Cork under the Water Framework Directive. Carried out by EcoServe on behalf of the Marine Institute.

MERC (2012). Intertidal Benthic Survey of Great Island Channel SAC and Cork Harbour SPA. Carried out by MERC on behalf of the Marine Institute in partnership with National Parks and Wildlife Service, Department of Environment, Heritage and Local Government.

Figure 1. Extent of Mudflats and sandflats not covered by seawater at low tide in Great Island Channel SAC

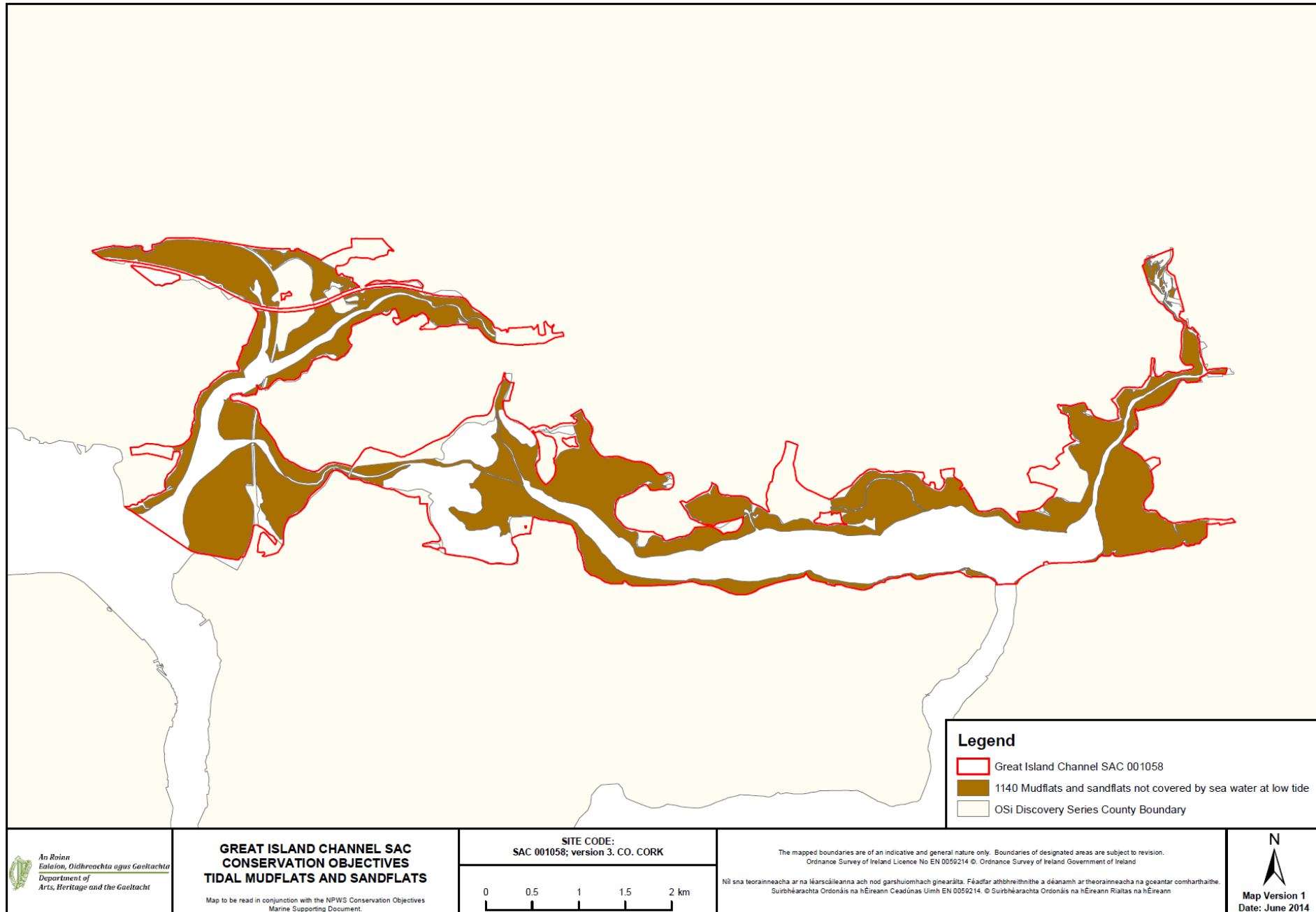


Figure 2. Distribution of the community type in Great Island Channel SAC

