NPWS (2012)

Baldoyle Bay SAC (site code: 199)

Conservation objectives supporting document - Marine Habitats

Version 1

September 2012

Introduction

Baldoyle Bay SAC is designated for the marine Annex I qualifying interest of Mudflats and sandflats not covered by sea water at low tide (1140) (Figure 1).

Intertidal surveys were undertaken in 2007 and 2010 (Aquafact, 2007; MERC & ERM, 2012) and this data was used to determine the physical and biological nature of this SAC and overlapping Baldoyle Bay Special Protection Area (SPA) (site code 4016).

Aspects of the biology and ecology of the Annex I habitat are provided in Section 1. The corresponding site-specific conservation objectives 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 objectives and targets in the completion of such assessments is provided in Section 2.

Section 1

Principal Benthic Communities

Within Baldoyle Bay SAC two community types are recorded in the Annex I habitat and the overlapping SPA. These are presented in table 1 and a description of each community type is given below.

Community Type	SAC Annex I Habitat	SPA
	Mudflats and sandflats not covered by seawater at low tide (1140)	
Fine sand dominated by *Angulus tenuis* community complex	✓	✓
Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex	✓	✓

Table 1 The community types recorded in Baldoyle Bay SAC and their occurrence in the Annex I habitats and the adjacent SPA.

Estimated areas of each community type in the Annex I habitat, based on interpolation, are 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 Baldoyle Bay SAC 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.

FINE SAND DOMINATED BY ANGULUS TENUIS COMMUNITY COMPLEX

This complex is located on the eastern reaches of the site from Claremont Beach at Howth in the south, north to Velvet Strand at Portmarnock; it extends westward as far as Portmarnock Point and Cush Point (Figure 2).

The sediment of this community complex is largely that of fine sand which ranges from 63.9% to 93%; medium sand ranges from 0.4% to 30.1%. Negligible amounts of silt-clay and gravel are recorded within this complex.

This community complex is distinguished by the bivalve *Angulus tenuis* which occurs in high to moderate abundances here. The bivalve *Angulus fabula* and the polychaetes *Nephtys*

cirrosa, Scoloplos armiger, Sigalion mathildae, Lanice conchilega are also recorded within this complex. The amphipod *Bathyporeia pelagica* and the bivalve *Donax vittatus* occur in high abundance at Claremont Beach, while unidentified species of the oligochaete family Enchytraeidae are recorded on Velvet Strand and west of Howth (Table 2).

Distinguishing species of Fine sand dominated by *Angulus tenuis* community complex	
Angulus tenuis	*Angulus fabula*
Nephtys cirrosa	*Donax vittatus*
Scoloplos armiger	*Bathyporeia pelagica*
Sigalion mathildae	Enchytraeidae
Lanice conchilega	

Table 2 Distinguishing species of the Fine sand dominated by *Angulus tenuis* community complex.

ESTUARINE SANDY MUD WITH *PYGOSPIO ELEGANS* AND *TUBIFICOIDES BENEDII* COMMUNITY COMPLEX

This community complex occurs from Portmarnock Point and Cush Point to the inner reaches of the site (Figure 2).

The sediment is largely that of sandy mud; silt-clay and fine sand range from 0% to 84.9% and 8.9% to 88.5% respectively, with gravel ranging from 0% to 32.15% and very coarse sand 0% to 19.9%.

This community complex is distinguished by the polychaetes *Pygospio elegans* and *Hediste diversicolor* and the oligochaete *Tubificoides benedii*. Within this complex the bivalve *Cerastoderma edule* is abundant at the outer reaches of the estuary at Portmarnock Point and Cush Point whilst the polychaete *Hediste diversicolor* occurs in high abundance along the western shoreline from Mayne Bridge to Sutton. The algae *Ulva lactuca* and *Ulva* sp. are also recorded here (Table 3).

Distinguishing species of Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex	
Pygospio elegans	*Peringia ulvae*
Tubificoides benedii	*Cerastoderma edule*
Hediste diversicolor	*Ulva lactuca*
Eteone longa	*Ulva* sp.

Table 3 Distinguishing species of the Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* 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 habitat 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 Baldoyle Bay 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 types in a natural condition: Fine sand dominated by *Angulus tenuis* community complex; and Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex.

- A semi-quantitative description of the communities has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 2.
- The estimated areas of the communities within the Mudflats and sandflats not covered by seawater at low tide habitat given below are based on spatial interpolation and therefore should be considered indicative:
  - Fine sand dominated by *Angulus tenuis* community complex – 257ha
  - Estuarine sandy mud with *Pygospio elegans* and *Tubificoides benedii* community complex – 152ha
- 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 (2007). A Survey of Intertidal Sandflats and Mudflats in Ireland. Carried out by Aquafact International Services Ltd. on behalf of National Parks and Wildlife Service.

MERC & ERM (2012). Intertidal Benthic Survey Baldoyle Bay SAC and Baldoyle Bay SPA. Produced by MERC and ERM on behalf of Marine Institute in partnership with National Parks & Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

Figure 1. Extent of Mudflats and sandflats not covered by seawater at low tide in Baldoyle Bay SAC

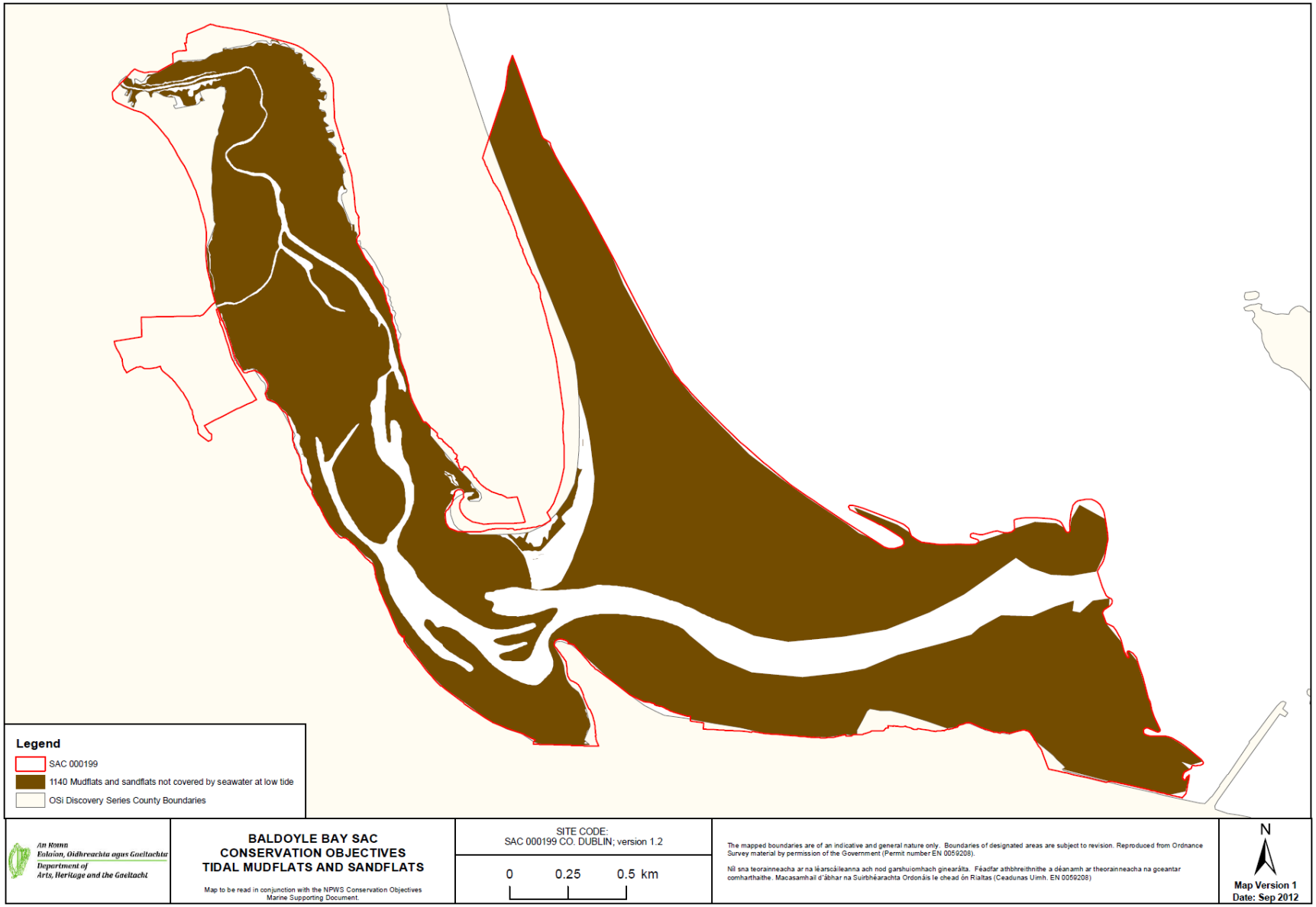

Figure 2. Distribution of community types in Baldoyle Bay SAC