

NPWS (2011)

Dundalk Bay SAC (site code: 455)

**Conservation objectives supporting document- marine
habitats**

**Version 1
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Introduction

Dundalk Bay SAC is designated for the Annex I qualifying interests of Mudflats and sandflats not covered by sea water at low tide (Figure 1) and Estuaries (Figure 2).

Two intertidal surveys in 2007 and 2008, and a subtidal survey in 2009 were undertaken within the site and this data was used to determine the physical and biological nature of the bay. The principal biological targets that were derived from this survey work are described 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

MUDDY FINE SAND COMMUNITY

This intertidal community is confined to the upper shore sediments; it is associated with the estuarine areas of the Castletown River and runs in a narrow band along the eastern margin of the bay to the mouth of the River Glyde south of Castlebellingham (Figure 3). The sediment is that of very fine sand (>65%) with variable amounts of fine sand (3-31%) and with a low proportion of silt-clay (<7%).

The distinguishing species for this community indicate that this is low or variable salinity sediment (Table 1). The polychaete *Pygospio elegans*, the amphipod *Corophium volutator* and the bivalve *Macoma balthica*, frequently occur in high densities here; other species commonly present include the polychaetes *Eteone longa* and *Hediste diversicolor*, the oligochaete *Tubificoides benedii* and the bivalve *Scrobicularia plana*.

Distinguishing species of Muddy fine sand community	
<i>Pygospio elegans</i>	<i>Tubificoides benedii</i>
<i>Corophium volutator</i>	<i>Scrobicularia plana</i>
<i>Macoma balthica</i>	<i>Heterochaeta costata</i>
<i>Eteone longa</i>	<i>Nephtys hombergii</i>
<i>Hediste diversicolor</i>	<i>Tubificoides pseudogaster</i>

Table 1 Distinguishing species for the Muddy fine sand community.

FINE SAND COMMUNITY COMPLEX

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 temporally or spatially stable and/or distinct to become the focus of conservation efforts. In this case, multivariate analysis of the data from Dundalk Bay identified a series of biological communities whose species composition overlapped significantly. Such biological communities are grouped together into what experts consider are sufficiently stable units for conservation targets.

This complex occurs both intertidally and subtidally within this site and reflects the gradation of fine sediment across the bay (Figure 3). The intertidal element is present from the upper to the lower shore and occurs in the Annex I habitat Mudflat and sandflat not covered by sea water at low tide. The subtidal element occurs in the shallow channels running through the sandflat at the western margins of the site and the larger channel of the Castletown River (within the Annex I habitat Estuary) and extends throughout the open waters of the bay.

The substrate is that of fine (1-93%) or very fine sand (2 -93%) with mud or medium sand occasionally present.

The distinguishing species of the community complex are the bivalves *Angulus tenuis* and *Fabulina fabula* and the polychaetes *Capitella capitata*, *Spio martinensis*, *Sigalion mathildae* and *Lanice conchilega* (Table 2).

Distinguishing species of Fine sand community complex	
<i>Angulus tenuis</i>	<i>Nephtys hombergii</i>
<i>Capitella capitata</i>	<i>Cerastoderma edule</i>
<i>Spio martinensis</i>	<i>Pygospio elegans</i>
<i>Fabulina fabula</i>	<i>Scoloplos armiger</i>
<i>Sigalion mathildae</i>	<i>Crangon crangon</i>
<i>Lanice conchilega</i>	<i>Spiophanes bombyx</i>

Table 2 The main species present in the Fine sand community complex.

The intertidal element is distinguished by the bivalve mollusc *Angulus tenuis*, the polychaetes *Nephtys hombergii* and *Nephtys cirrosa* also commonly occur here. Subtidally, the distinguishing species of the shallow subtidal estuarine channel are *Capitella capitata* and *Nephtys hombergii*, whilst the latter along with the bivalve *Fabulina fabula*, and the polychaetes, *Owenia fusiformis*, *Lanice conchilega*, and *Sigalion mathildae* occur in the more open marine waters.

GRAVEL DOMINATED BY POLYCHAETES COMMUNITY

This subtidal community is confined to a well-defined area of clean gravel in the middle of the bay, at depths of greater than 5m (Figure 3).

The presence of hard substrata and the associated increase in habitat complexity has resulted in a biological assemblage comprising both infaunal and epifaunal species and leads to a large number of distinguishing species (Table 3). The epifaunal calcareous tubeworm *Pomatoceros lamarkii* is present in high numbers attached to gravel fragments, while the crustacean *Porcellana platycheles* is also common. The polychaetes *Harmothoe* spp., *Pholoe inornata* and *Eulalia aurea*, all known to have a preference for gravelly or creviced substrata, are also commonly present. Other frequently recorded polychaetes include *Odontosyllis gibba*, *Kefersteinia cirrata*, *Eumida sanguinea* and *Lepidonotus squamatus*.

**Distinguishing species of Gravel dominated by
polychaetes community**

<i>Pomatoceros lamarckii</i>	<i>Nemertea indet.</i>
<i>Harmothoe</i> spp.	<i>Lepidonotus squamatus</i>
<i>Eumida sanguinea</i>	<i>Tectura virginea</i>
<i>Porcellana platycheles</i>	<i>Phthisica marina</i>
<i>Pholoe inornata</i>	<i>Achelia echinata</i>
<i>Odontosyllis gibba</i>	<i>Flabelligera affinis</i>
<i>Kefersteinia cirrata</i>	<i>Syllidia armata</i>
<i>Eulalia aurea</i>	<i>Abra alba</i>
	<i>Gattyana cirrosa</i>

Table 3. The distinguishing species for the Gravel dominated by polychaetes community.

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. The Department of the Environment, Heritage and Local Government has prepared general guidance on the completion of such assessments (www.npws.ie).

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 by natural processes alone, 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) 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 to facilitate the appropriate assessment process:

Objective **To maintain the favourable conservation status of Mudflat and sandflat not covered by seawater at low tide at Dundalk Bay, 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.
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- This target refers to activities or operations that propose to permanently remove habitat from the 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	The Muddy fine sand community and intertidal Fine sand community complex should be conserved in a natural condition.
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- A semi-quantitative description of these community types has been provided in Section 1. Note the intertidal component of the Fine sand community complex is that part that occurs in the Annex I habitat Mudflat and sandflat not covered by seawater at low tide.
- The interpolation of their likely distribution is provided in the figures below.
- Significant continuous or ongoing disturbance of communities should not exceed an approximate area of 15% of the interpolated area for 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 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.

Objective To maintain the favourable conservation status of Estuary at Dundalk Bay, 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.
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- This habitat also encompasses other Annex I habitats (e.g., Saltmarsh, Mudflat and sandflat not covered by seawater at low tide). They must also be addressed in their own right.
- This target refers to activities or operations that propose to permanently remove habitat from the 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	The subtidal Fine sand community complex should be conserved in a natural condition.
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- Estuarine habitat encompasses part of the Annex I habitat Mudflat and sandflat not covered by seawater at low tide and Saltmarsh. In such areas, the specific targets for those Annex I habitats will address requirements within the Annex I habitat Estuary.
- A semi-quantitative description of this community complex has been provided in Section 1. Note the Annex I habitat Estuary encompasses part of the subtidal component of the Fine sand community complex.
- The interpolation of its likely distribution is provided in the figures below.
- Significant continuous or ongoing disturbance should not exceed an approximate area of 15% of the interpolated area. Thereafter the precautionary principle applies. It is recommended that an inter-Departmental management review should be undertaken prior to further licensing of such activities.
- Proposed activities or operations that cause significant disturbance 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.

Figure 1 Extent of Annex I habitat Mudflat and sandflat not covered by seawater at low tide in Dundalk Bay SAC

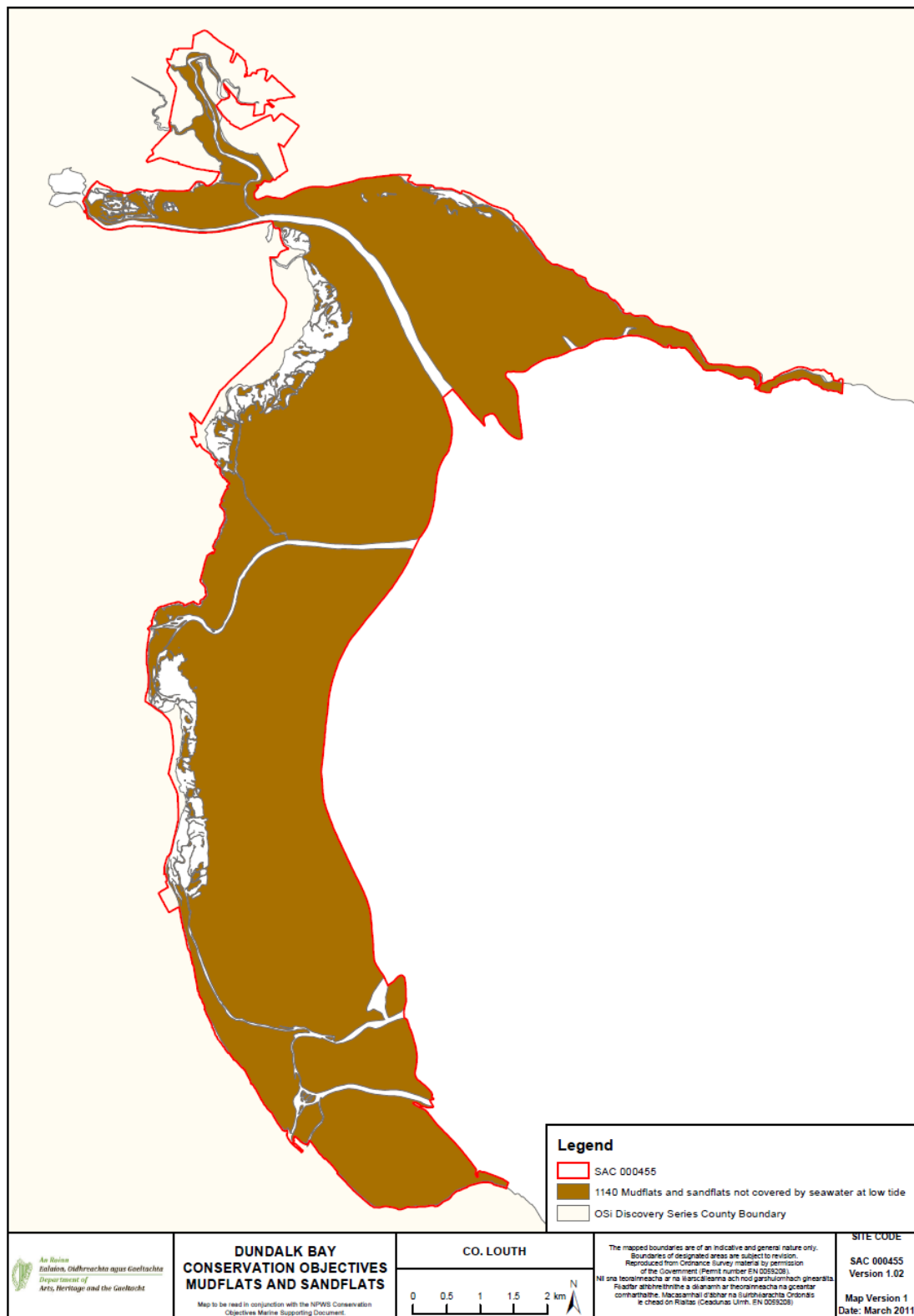


Figure 2 Extent of Annex I habitat Estuary in Dundalk Bay SAC.

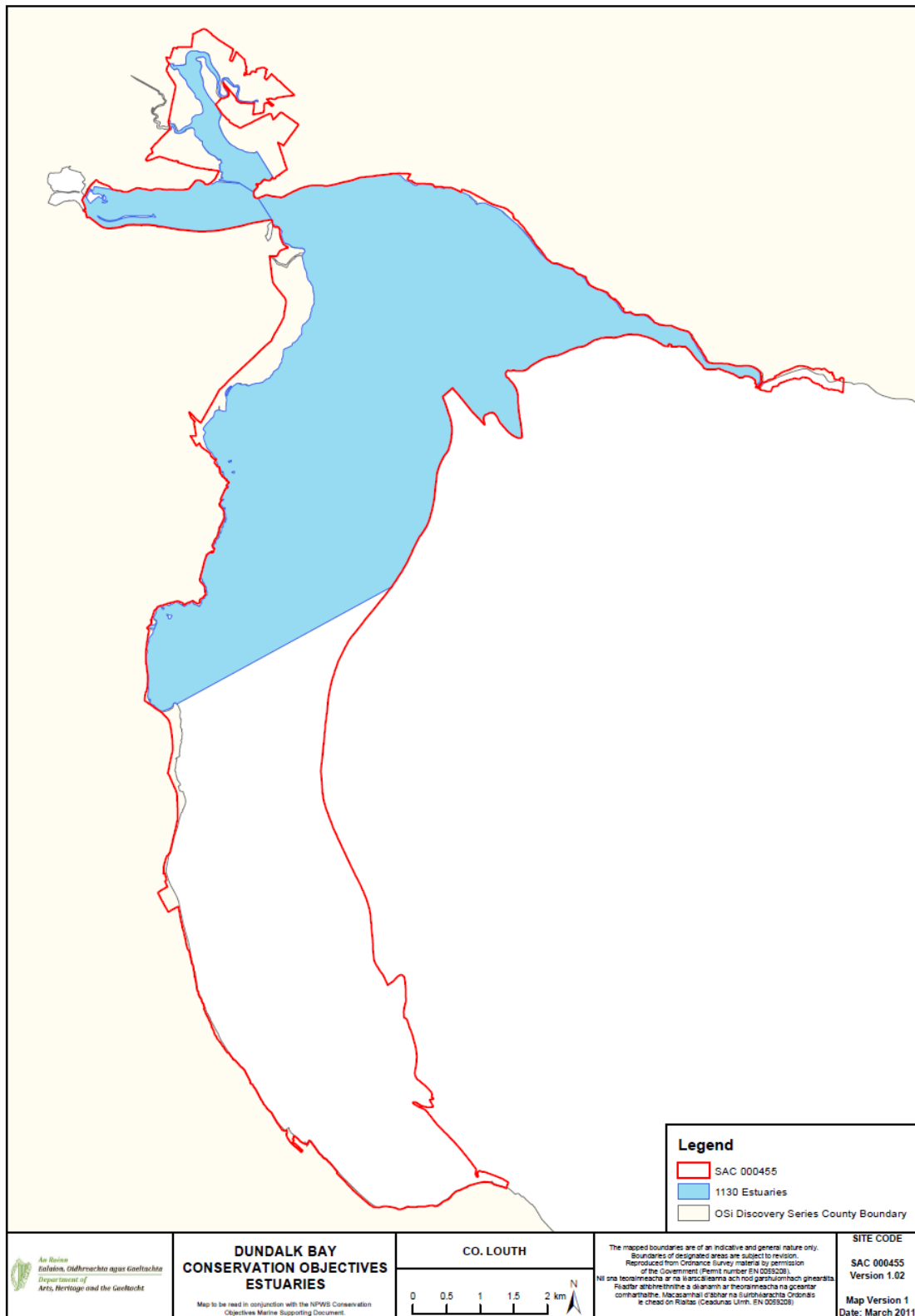


Figure 2 Broadscale distribution of communities in Dundalk Bay SAC and adjacent areas.

