

NPWS

Ballyteige Burrow SAC (site code: 696)

**Conservation objectives supporting document -
Marine Habitats**

**Version 1
January 2014**

Introduction

Ballyteige Burrow SAC is designated for the marine Annex I qualifying interest of Estuaries and Mudflats and sandflats not covered by seawater at low tide (Figure 1 and 2). The Annex I habitat Estuaries is a large physiographic feature that may wholly or partly incorporate other Annex I habitats including mudflats and sandflats within its area.

Intertidal surveys were undertaken in 2006 and 2011 (Aquafact, 2006; MERC, 2012) and a subtidal survey in 2011 (MERC, 2012). These data were used to determine the physical and biological nature of this SAC and the overlapping Special Protection Area Ballyteige Burrow SPA (site code 4020).

Aspects of the biology and ecology of the Annex I habitats 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 Ballyteige Burrow SAC, two community types are recorded. Their occurrence within the Annex I habitats and the SPA are presented in table 1; a description of each community type is given below.

| Community Type | SAC Annex I Habitats | | SPA |
|---|----------------------|---|-----|
| | Estuaries (1130) | Mudflats and sandflats not covered by seawater at low tide (1140) | |
| Mixed sediment to sand with nematodes and <i>Tubificoides benedii</i> community complex | ✓ | ✓ | ✓ |
| Sand with crustaceans and <i>Nephtys hombergii</i> community complex | ✓ | | ✓ |

Table 1 The community types recorded in Ballyteige Burrow SAC and their occurrence in the Annex I habitats and the overlapping SPA.

Estimated areas of each 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 Ballyteige Burrow 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 SAND WITH NEMATODES AND *TUBIFICOIDES BENEDII* COMMUNITY COMPLEX

The complex is recorded throughout the intertidal at this site and in the shallow subtidal in the inner reaches of the estuary (Figure 3).

The sediment is variable ranging from sandy mud in the inner reaches of the estuary (fine sand and silt-clay ranging from 8.7% to 61.8% and 10.5% to 52%, respectively) to coarse sediment in the exposed outer shore (gravel ranges from 0.2% to 27.3% and coarse sand from 17.6% to 46.8%).

The distinguishing species of this community complex include unidentified nematodes, the oligochaete *Tubificoides benedii* and unidentified oligochaetes of the family Enchytraeidae, the polychaetes *Pygospio elegans* and *Eteone longa*, and the amphipod *Corophium volutator*.

These species are not uniformly distributed within the community complex. The exposed mobile sand has low species diversity with only enchytraeids being recorded in moderate abundances in some areas here. *T. benedii* is recorded in moderate to high abundances in the inner estuary but is absent from the outer estuary and on the exposed beach. *P. elegans* is recorded in its highest abundance on the shore at Lacken; elsewhere it occurs in moderate to low abundances. It is absent from all but the western end of the exposed beach where it occurs in low abundances. *E. longa* occurs in moderate abundances within the estuary and is only recorded midway along the exposed beach. *C. volutator* is recorded in moderate to high abundances in the east of the site from Blackstone to the east of Cull Island and it occurs in low abundances in the outer reaches of the estuary. Unidentified nematodes occur in high to moderate abundances in the outer reaches of the estuary and at eastern extreme of the exposed beach; they are not recorded elsewhere within the site.

Other species present here include the gastropod *Peringia ulvae* and the polychaete *Hediste diversicolor* and the bivalves *Cerastoderma edule* and *Mya arenaria*. *Arenicola marina* is recorded as abundant on the north shore of the sheltered estuary, near Lough, and in the inner estuary just north of Blackstone. Green filamentous algae (*Ulva* spp.) and *Ulva lactuca* are present extensively in these areas. The bivalve *Lasaea adansonii* occurs in high abundance at the outer reaches of the estuary reflecting the coarse nature of the sediment here.

| Distinguishing species of Mixed sediment to sand with nematodes and <i>Tubificoides benedii</i> community complex | |
|---|----------------------------|
| Nematoda indet. | Enchytraeidae indet. |
| <i>Tubificoides benedii</i> | <i>Corophium volutator</i> |
| <i>Pygospio elegans</i> | <i>Eteone longa</i> |

Table 2 Distinguishing species of Mixed sediment to sand with nematodes and *Tubificoides benedii* community complex.

SAND WITH CRUSTACEANS AND *NEPHTYS HOMBERGII* COMMUNITY COMPLEX

This subtidal community complex is recorded throughout the site at depths of between 0m and 7m (Figure 3).

The sediment is largely that of fine and very fine sands (ranging from 44.4% to 84.1% and 7.7% to 52.6%, respectively) the exception being at the entrance to the estuary where the

substrate is that of coarse sediment (gravel is 28.9% of the sediment compared to less than 0.2% elsewhere).

The community complex is distinguished by the amphipods *Bathyporeia elegans* and *Pontocrates arcticus* and the polychaete *Nephtys hombergii*. *N. hombergii* is recorded within the estuary while *P. arcticus* and *B. elegans* are only recorded outside it.

Other species present in this community complex include the polychaetes *Magelona johnstoni*, *Spio martinensis*, *Nephtys cirrosa*, and *Melita palmata* and the amphipods *Gammarus locusta*, *Urothoe brevicornis* and *Bathyporeia pelagica*. *Gammarus locusta* is recorded in high abundance in the coarse sediment near the mouth of the estuary. The polychaete *Melinna palmata* and *Spio martinensis* are recorded within the estuary while *Spiophanes bombyx*, *Paraspio decorata* and *Sigalion mathildae* only occur outside the estuary.

| Distinguishing species of the Sand with crustaceans and <i>Nephtys hombergii</i> community complex | |
|--|-----------------------------|
| <i>Bathyporeia elegans</i> | <i>Pontocrates arcticus</i> |
| <i>Nephtys hombergii</i> | |

Table 3 Distinguishing species of the Sand with crustaceans and *Nephtys hombergii* 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 Ballyteige Burrow 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 sand with nematodes and <i>Tubificoides benedii</i> 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 3.
- 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 sand with nematodes and *Tubificoides benedii* community complex - 201ha
- 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.

Objective **To maintain the favourable conservation condition of Estuaries in Ballyteige Burrow 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 habitat also encompasses the Annex I habitat of mudflats and sandflats not covered by seawater at low tide. In such areas, the specific targets for that Annex I habitat will address requirements within the Annex I habitat Estuaries.
- 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 a natural condition: Mixed sediment to sand with nematodes and <i>Tubificoides benedii</i> community complex and Sand with crustaceans and <i>Nephtys hombergii</i> community complex. |
|-----------------|---|

- A semi-quantitative description of these community types has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 3.
- The estimated area of these community types within the Estuaries habitat given below is based on spatial interpolation and therefore should be considered indicative:
 - Mixed sediment to sand with nematodes and *Tubificoides benedii* community complex - 164ha
 - Sand with crustaceans and *Nephtys hombergii* community complex - 30ha
- Significant continuous or ongoing disturbance of communities should not exceed an approximate area of 15% of the interpolated area, 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.

MERC (2012). Intertidal Benthic Survey of Ballyteige Burrow SAC and Ballyteigue Burrow 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.

MERC (2012). Subtidal Benthic Survey of Ballyteige Burrow SAC. 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 Ballyteige Burrow SAC

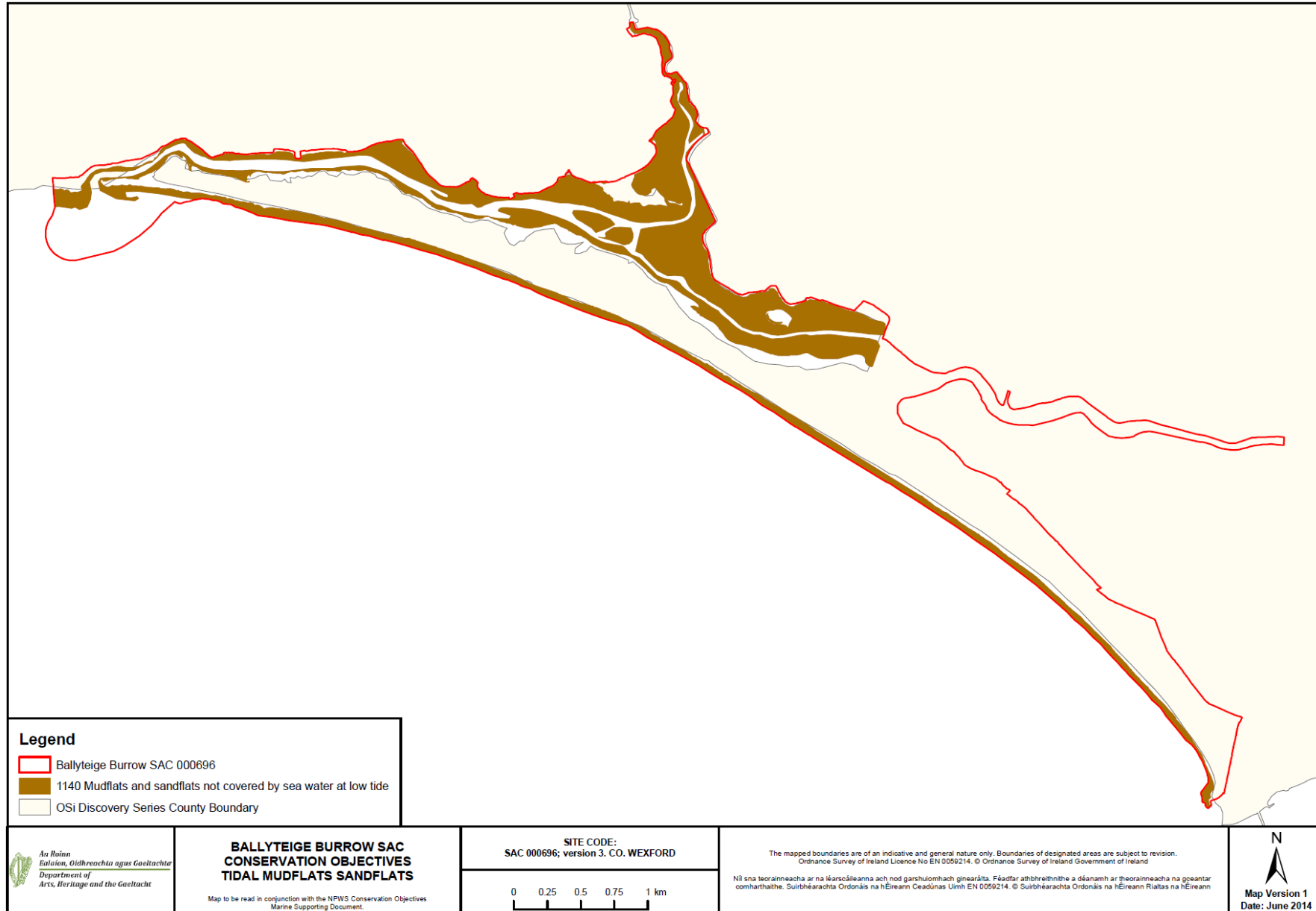


Figure 2. Extent of Estuaries in Ballyteige Burrow SAC

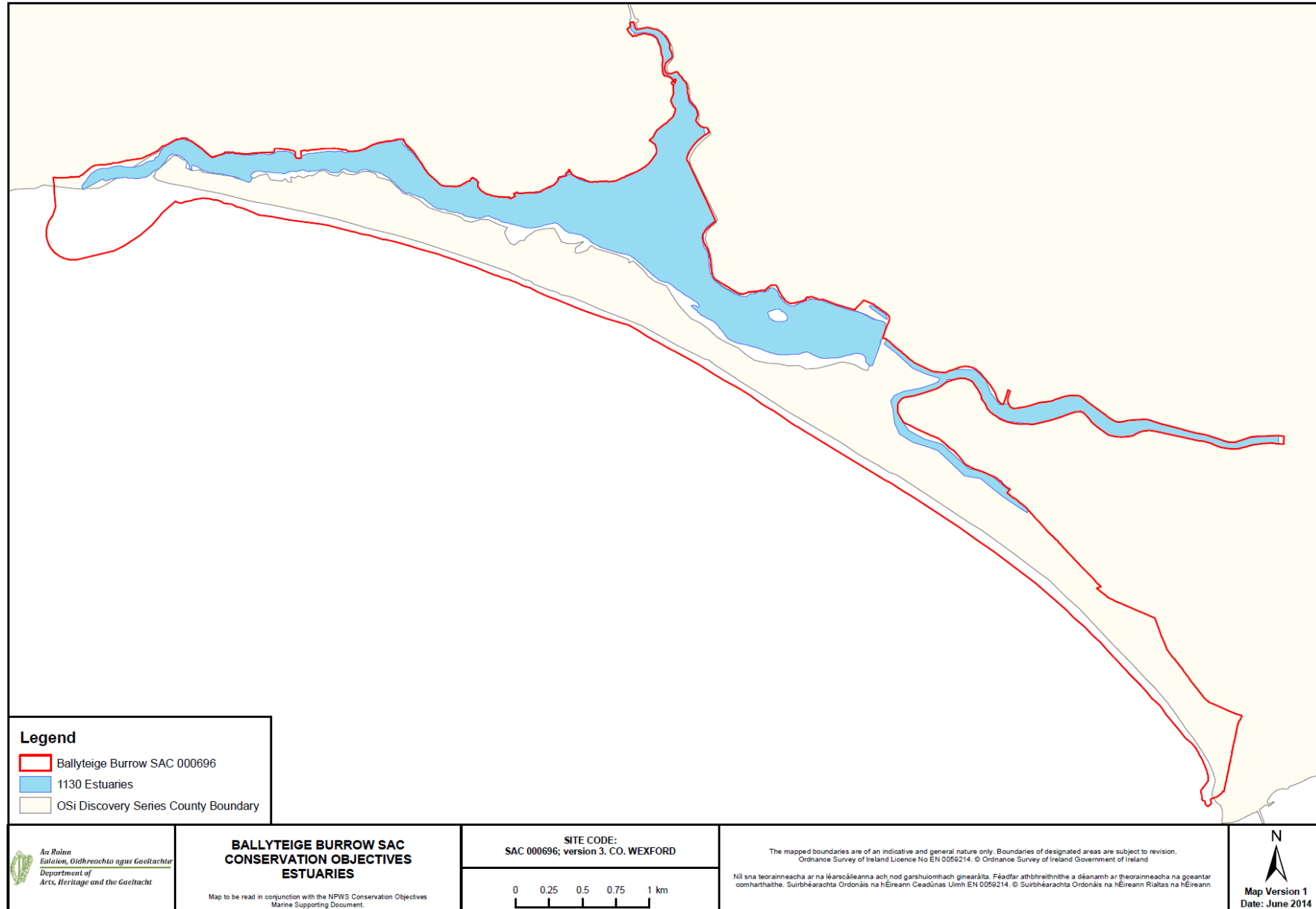


Figure 3. Distribution of community types in Ballyteige Burrow SAC

