NPWS (2011)

River Barrow and River Nore SAC (site code: 2162)

Conservation objectives supporting document
-marine habitats

Version 1

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Introduction

River Barrow and River Nore SAC is designated for the Annex I qualifying interests of Estuaries and Mudflats and sandflats not covered by sea water at low tide (Figures 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 and subtidal surveys were undertaken in 2008 and these data are used to determine the physical and biological nature of the site. This facilitated the development of site-specific conservation objectives that will allow Ireland deliver 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 below.

Section 1

MUDFLATS AND SANDFLATS NOT COVERED BY SEAWATER AT LOW TIDE

This Annex I habitat occurs intertidally between the Mean Low Water Mark (MLWM) and the Mean High Water Mark (HMWM), its seaward boundary is defined by the Ordnance Survey Mean Low Water boundary. Expanses of sandflat are recorded in the southern margins of the site; it occurs from Creaden Head to Passage East on the western shore and from Black Point to Duncannon Fort on the eastern shore (figure 2). Mudflat is present as a narrow band on the western shore and on the eastern shore broad areas occur at Shelbourne Bay and Fishertown Flats, thereafter it continues north as a narrow band.

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 the River Barrow and River Nore 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 (i.e., a complex) for conservation targets.

MUDDY ESTUARINE COMMUNITY COMPLEX

This community complex is present intertidally and subtidally from Cheek Point and Great Island northward to New Ross (Figure 3).

The substrate of this community complex is predominantly of fine material, with the fine sand fraction ranging from 0.1-77%, very fine sand from 0-59% and silt-clay from 1-75%. Subtidally the sediment is mobile in nature and this is reflected in the variation in the grain size, with very coarse sand and coarse sand from ranging from 0.5 to 46% and 1.5-42% respectively.

The distinguishing species for this group are the bivalves *Scrobicularia plana* and *Macoma balthica*, the amphipod *Corophium volutator,* the polychaete *Streblospio shrubsolii* and the oligochaetes *Tubificoides pseudogaster* and *Tubificoides benedii*. These species are indicative of a variable salinity community.

Distinguishing species of the Muddy estuarine community complex	
Scrobicularia plana	*Tubificoides amplivasatus*
Corophium volutator	*Macoma balthica*
Nephtys hombergii	*Streblospio shrubsolii*
Tubificoides benedii	*Capitella* sp.
Tubificoides pseudogaster	*Neomysis integer*

Table 1 Distinguishing species of the Muddy estuarine community complex.

SAND TO MUDDY FINE SAND COMMUNITY COMPLEX

This community complex occurs intertidally from Passage East to Creaden Point on the western shore and from Duncannon Fort to Black Point on the eastern shore. Subtidally it is recorded from Cheek Point and Great Island south through the channel to midway along Passage Strand on the west side of the estuary and to Black Point on the eastern side.

This community complex occurs from the upper intertidal to the subtidal and represents a gradient from medium sand (0.2-78%) to muddy fine sand (fine sand 3-80%, very fine sand 0.5-68% and silt-clay 1-80%).

In those sediments which have a small proportion of muds the bivalve *Cerastoderma edule* and the polychaete *Scolelepis squamata* are commonly present. As the fines proportion increases the bivalve *Macoma balthica* and the polychaete *Pygospio elegans* are more commonly present.

Distinguishing species of the Sand to muddy fine sand community complex	
Pygospio elegans	*Crangon crangon*
Nephtys hombergii	*Cumopsis goodsiri*
Bathyporeia pilosa	*Malmgreniella marphysae*
Angulus tenuis	*Orbinia latreillii*
Nephtys cirrosa	*Scoloplos armiger*
Scolelepis squamata	*Macoma balthica*
Cerastoderma edule	*Hediste diversicolor*
Lanice conchilega	*Capitella* sp.
Nemertea indet.	*Tubificoides pseudogaster*

Table 2 Distinguishing species of the Sand to muddy fine sand community complex.

ESTUARIES

Estuary is considered to be the Transitional Water Body area as defined by the EPA under the Water Framework Directive. The inner boundary of the estuary is taken to be at New Ross and the outer boundary occurs between Creaden Head and Broomhill Point.

In addition to the Muddy estuarine community complex and Sand to muddy fine sand community complex two additional communities occur within this Annex I habitat. These are described below.

FINE SAND WITH *FABULINA FABULA* COMMUNITY

This subtidal community is confined to the southern margin of this site at the mouth of Waterford Harbour. Its northern limit is broadly delineated by a line extending from Crooke on the western side to Balinphile on the eastern side of the Waterford Harbour.

The sediment is that of fine sand ranging from 43-59% to very fine sand ranging from 24-45%.

The biological community is distinguished by the co-occurrence of moderately large numbers of the bivalve *Fabulina fabula* and the polychaete *Nephtys hombergii*. Also frequently present are the polychaetes *Owenia fusiformis* and *Magelona filiformis* and the bivalve *Mactra stultorum*.

Distinguishing species of the Fine sand with *Fabulina fabula* community	
Fabulina fabula	*Perioculodes longimanus*
Nephtys hombergii	*Sigalion mathildae*
Owenia fusiformis	*Glycera tridactyla*
Magelona johnstoni	*Abra alba*
Mactra stultorum	*Ampelisca brevicornis*
Magelona filiformis	

Table3 Distinguishing species of the Fine sand with *Fabulina fabula* community.

SABELLARIA ALVEOLATA REEF

An extensive and expansive area of *Sabellaria alveolata* reef occurs intertidally in Duncannon Bay.

This biogenic reef forms draping structures over exposed bedrock and where suitable substrate is available forms upstanding features with a prominent three-dimensional aspect.

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).

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) 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 Estuaries in the River Barrow and River Nore 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 other Annex I habitats such as mudflats and sandflats not covered by seawater at low tide and a number of saltmarsh types. In such areas, the specific targets for those Annex I habitats 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	The following community types should be conserved in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand community complex; Fine Sand with *Fabulina fabula* community.

- A semi-quantitative description of the communities has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 3.
  - The estimated areas of the communities within the Estuaries habitat given below are based on spatial interpolation and therefore should be used with a degree of caution:
    - Muddy estuarine community complex; - 852ha
    - Sand to muddy fine sand community complex- 1,509ha
    - Fine Sand with *Fabulina fabula* community- 1,118ha
- 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.

Target 3	The extent of the *Sabellaria alveolata* reef is conserved, subject to natural processes.

- This species forms expansive reef structures and it acts as an ecosystem engineer, increasing availability of habitat for other species
- Any significant anthropogenic disturbance to the extent of this community should be avoided.
- The likely distribution of the *Sabellaria alveolata* reef is shown in figure 3.
- The estimated area of discontinuous *Sabellaria alveolata* reef within the Estuary is 20ha.

Objective	**To maintain the favourable conservation condition of Mudflats and sandflats not covered by seawater at low tide in the River Barrow and River Nore 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	Within Mudflats and sandflats not covered by seawater at low tide the following community types should be conserved in a natural condition: Muddy estuarine community complex; Sand to muddy fine sand 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 3.
  - 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 used with a degree of caution:
    - Muddy estuarine community complex; - 366ha
    - Sand to muddy fine sand community complex- 560ha
- 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.

Figure 1 Extent of Annex I habitat Estuaries in River Barrow and River Nore SAC

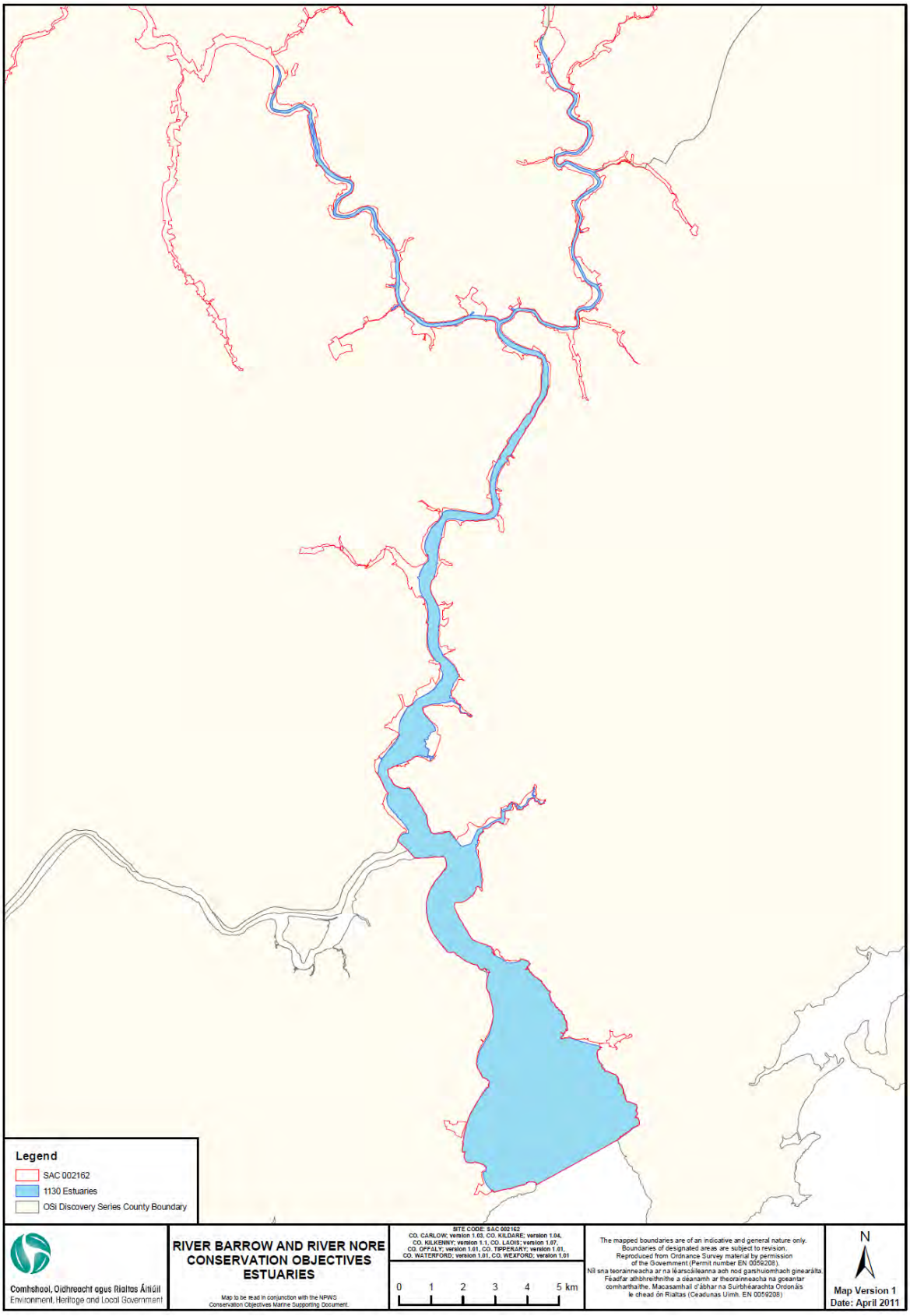

Figure 2 Extent of Annex I habitat Mudflat and sandflat not covered by seawater at low tide in River Barrow and River Nore SAC

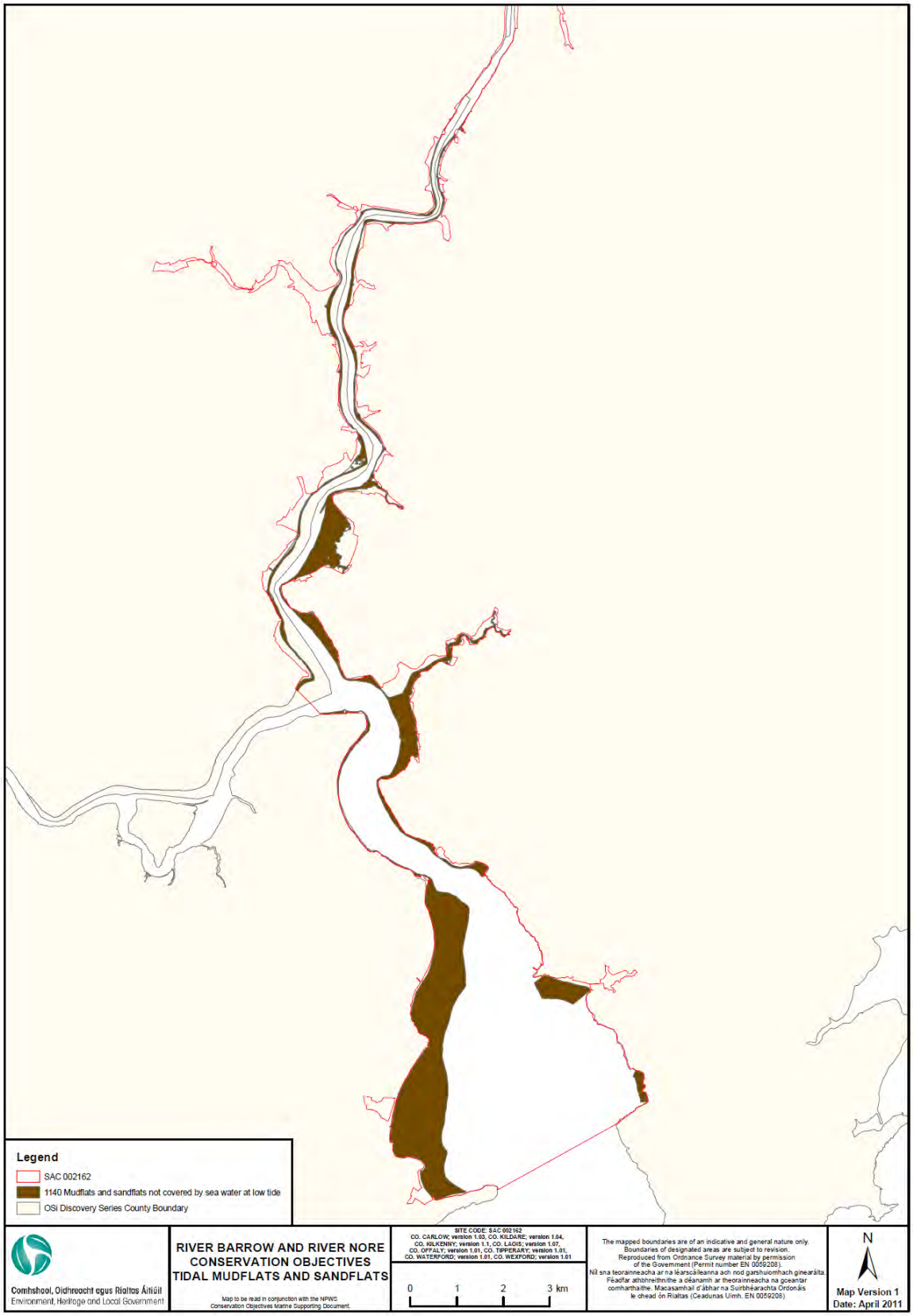

Figure 3 Broadscale community distribution in River Barrow and River Nore SAC