NPWS

Tralee Bay and Magharees Peninsula, West to Cloghane SAC (site code: 2070)

Conservation objectives supporting document - Marine Habitats

Version 1

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Introduction

Tralee Bay and Magharees Peninsula, West to Cloghane SAC is designated for the marine Annex I qualifying interest of Mudflats and sandflats not covered by seawater at low tide, Estuaries, Large shallow inlets and bays and Reefs (Figures 1, 2, 3 and 4).

Intertidal surveys were carried out in 2007, 2009 and 2011 (ASU, 2007, MERL 2011, RPS, 2013), subtidal surveys were undertaken in 2009 and 2010 (ERM, 2010 and Aquafact, 2011). In 2009 a survey of sensitive subtidal benthic communities was undertaken at this site (MERC, 2009) and a BioMar survey of the area was carried out in 1996 (Picton & Costello, 1997). The densities of *Ostrea edulis* within the bay was determined using unpublished data from the Marine Institute's 2012 survey of the oyster beds within the bay. Data on the intertidal *Zostera* beds were derived from the EPA national Water Framework Directive monitoring programme (http://www.epa.ie/whatwedo/wfd/monitoring/) and from an intertidal walkover undertaken in 2013.

These data were used to determine the physical and biological nature of this SAC and overlapping Special Protection Area of Tralee Bay Complex SPA (site code 4188). This SPA also overlaps another SAC (Akeragh, Banna and Barrow Harbour SAC (site code 0332)) thus, some of the marine community type descriptions and mapping extend into this SAC. However, the areas given for each community type in Section 2 are for SAC 2070 only.

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 Tralee Bay and Magharees Peninsula, West to Cloghane SAC, ten community types are recorded. The Annex I habitats in which the communities are recorded and their occurrence in the overlapping SPA is presented in table 1; a description of each community type is given below.

	Annex I Habitats				SPA
	Mudflats and sandflats not covered by sea water at low tide (1140)	Estuaries (1140)	Large shallow inlets and bays (1160)	Reefs (1170)	
Sand to sandy mud with polychaetes and bivalves community complex	✓	✓	✓		✓
Sand with *Nephtys cirrosa* community complex	✓		✓		✓
Mixed sediment with crustaceans, bivalves and polychaetes community complex		✓	✓		✓
Zostera-dominated community complex	✓	✓	✓		✓
Mytilus-dominated community	✓	✓	✓	✓	✓
Sabellaria-dominated community complex	✓		✓	✓	✓
Ostrea edulis-dominated community	✓		✓		✓
Intertidal reef community complex		✓	✓	✓	✓
Subtidal reef community complex			✓	✓	✓
Laminaria-dominated reef community complex			✓	✓	✓

Table 1 The community types recorded in Tralee Bay and Magharees Peninsula, West to Cloghane SAC and their occurrence in the Annex I habitats and the adjacent SPA.

Estimated area of each community type within the Annex I habitats is based on interpolation, and 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 Tralee Bay and Magharees Peninsula, West to Cloghane 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.

SAND TO SANDY MUD WITH POLYCHAETES AND BIVALVES COMMUNITY COMPLEX

This community complex occurs in the inner reaches of Tralee Bay from Derrymore Island on the southern shore to Spa on its northern shore; in Barrow Harbour, around the pier at Scraggane Point and in the inner reaches of Cloghane Creek (Figure 5). The complex is largely recorded in the intertidal but may extend into the shallow subtidal.

The substrate composition is variable, with fine sand generally representing the highest proportion of the sediment fractions (ranging from 1.8% to 87.2%). Within inner Tralee Bay, at Spa and around Derrymore Island and at the pier at Scraggane Point, the proportion of silt-clay is high, ranging from 10.9% to 88.3% compared to less than 6% elsewhere. Coarse sediments are generally low (<4%) or negligible, with the exception of the eastern shore of Derrymore Island where gravel and very coarse sand are recorded as 15.6% and 13.2% respectively. Within the complex, medium sand ranges from 0% to 59.9% and very fine sand from 0.6% to 64.2%.

This community complex is distinguished by the polychaetes *Pygospio elegans* and *Scoloplos armiger,* the gastropod *Peringia ulvae* and the oligochaete *Tubificoides benedii*. Other species present here include the bivalves *Cerastoderma edule* and *Macoma baltica* and the polychaetes *Eteone longa* and *Nephtys hombergii* (Table 2).

Pygospio elegans is chiefly recorded from the inner bay, with the highest abundance recorded between Derrymore Island and Blennerville on the southern shore. *Scoloplos armiger* is recorded in relatively high abundance at Fenit Harbour, north of Derrymore Island and from the shore at Spa. *Tubificoides benedii* is locally abundant in Barrow Harbour south of Fenit Island, in Bealathaleen Creek, on Derrymore Strand and at Carrigagharoe Point. While *Peringia ulvae* is recorded solely from within the inner reaches of Tralee Bay, the highest abundance of both this gastropod and the bivalve *Cerastoderma edule* are recorded on the eastern shore of Derrymore Island. *Angulus tenuis* is recorded in low abundance around the shore of Derrymore Island and on the shore at Spa.

The abundance of *Arenicola marina* casts recorded within this complex range from 0-11m^{-2}. *Lanice conchilega* (44m^{-2}) occurs on the shore at Spa. The patches of the red algae *Ceramium* sp. and mats of green algae *Ulva intestinalis* are recorded at some stations including Aughacasla Strand and Bunnahow.

Distinguishing species of Sand to sandy mud with polychaetes and bivalves community complex	
Pygospio elegans	*Peringia ulvae*
Scoloplos armiger	*Tubificoides benedii*
Cerastoderma edule	*Angulus tenuis*

Table 2 Distinguishing species of the Sand to sandy mud with polychaetes and bivalves community complex.

SAND WITH *NEPHTYS CIRROSA* COMMUNITY COMPLEX

This community complex occurs within the site in the shallow subtidal (<5m) at Cloghane Creek at the western boundary of the site, around the Magharees Peninsula east to Derrymore Island and into the inner reaches of Tralee Bay as far as Spa on its northern shore. It is recorded to the north of Fenit and off Banna Beach (Figure 5).

The sediment within the complex is largely that of fine to very fine sand (0.4% to 84.7% and 0.3% to 82%, respectively); in more exposed areas in the wider bay the sediment is coarser with medium sand accounting for the major proportion of the sediment fractions in these areas. Over most of the complex the proportion of silt-clay is negligible (<3%), with the exception of sheltered areas where levels of up to 29.9% are recorded. Similarly, gravel is negligible throughout most of the complex (<3%), however off Banna Beach and off Derrymore Island amounts of 17.4% and 8.2% are recorded.

The distinguishing species of this community complex are the polychaetes *Nephtys cirrosa Magelona mirabilis, Glycera tridactyla* and *Spiophanes bombyx,* the bivalves *Spisula subtruncata* and *Angulus fabula* and the cumacean *Vaunthompsonia cristata*. Other species recorded within this complex include unidentified nemerteans, the bivalve *Donax vittatus,* the polychaetes *Sigalion mathildae, Scolelepis foliosa,* and *Nephtys hombergii* and the crustaceans *Pontocrates arenarius, Perioculodes longimanus* and *Bathyporeia guilliamsoniana* (Table 3).

Nephtys cirrosa and *Glycera tridactyla* are recorded throughout the community complex, the former in moderate to low abundances, while the latter occurs in low abundances. The polychaetes *Magelona mirabilis* and *Spiophanes bombyx* and the crustacean *Perioculodes longimanus* are not uniformly distributed within the community, where they are recorded they

are in low abundances. The bivalves *Spisula subtruncata* and *Angulus fabula* are recorded in very high and high abundances respectively between Samphire Island and Carrigagharoe Point. The crustacean *Vaunthompsonia cristata* is recorded in high abundances within Scraggane Bay.

An intertidal variant of this community occurs in the north of the site at Banna Beach, Carrahane Strand and along the shore from north of Fenit to east of Black Rock; in the south of the site it is recorded from Derrymore Island west to the Magharees Peninsula, in Scraggane Bay, at Corralougha Strand and in Brandon Bay on Fermoyle Strand and south towards Cloghane. The sediment reflects that of the complex; however the polychaetes *Malacoceros fuliginosus*, and *Pygospio elegans* and the bivalve *Angulus tenuis* distinguish this variant. *Malacoceros fuliginosus* is recorded in extremely high abundances on Fermoyle Strand and also on Banna and Carrahane Strands. Although this species can be associated with organic enrichment its occurrence here is a natural phenomenon. *Angulus tenuis* is recorded in its high abundance around Derrymore Island.

Distinguishing species of Sand with *Nephtys cirrosa* community complex	
Nephtys cirrosa	*Vaunthompsonia cristata*
Spisula subtruncata	*Spiophanes bombyx*
Magelona mirabilis	*Angulus fabula*
Glycera tridactyla	

Table 3 Distinguishing species of the Sand with *Nephtys cirrosa* community complex.

MIXED SEDIMENT WITH CRUSTACEANS, BIVALVES AND POLYCHAETES COMMUNITY COMPLEX

This community complex is recorded extensively in outer Tralee Bay; it also occurs in the subtidal channel in inner Tralee Bay from Derrymore to Tralee (Figure 5). It is recorded in depths of between 0m and 8m.

The sediment is largely that of mixed to coarse sediment with gravel ranging from 0% to 37.5% and very coarse sand and coarse sand ranging from 0.03% to 27% and 0.3% to 12.6% respectively. Fine sand ranges from 3.5% to 86.8%. With the exception of off the coast from Castlegregory to Aughacasla Strand and west of Derrymore, the proportion of silt-clay is low (<8%).

The complex is characterised by the presence of the crustaceans *Aora gracilis* and *Cheirocratus intermedius*, the bivalves *Anomia ephippium* and the polychaete *Euclymene droebachiensis.* Other species present here include the bivalves *Thracia phaseolina* and

Spisula subtruncata, the polychaetes *Neanthes succinea and Cirratulus cirratus* and unidentified nemerteans (Table 4).

Aora gracilis is generally recorded in high abundances throughout this complex, with the exception of southern shore of outer Tralee Bay. *Cheirocratus intermedius* is recorded in high abundances, while *Anomia ephippium* and *Thracia phaseolina* are recorded through the complex with the exception of the subtidal surrounding Derrymore Island. *Euclymene droebachiensis* is not uniformly distributed within the community but where it occurs it is present in moderate abundances. *Spisula subtruncata* is recorded in the centre of Tralee Bay in low abundances.

In the outer bay north of Aughacasla Strand, the bivalve *Ostrea edulis* is recorded in densities of between $0m^{-2}$ and $0.5m^{-2}$.

Distinguishing species of Mixed sediment with crustaceans, bivalves and polychaetes community complex	
Aora gracilis	*Neanthes succinea*
Cheirocratus intermedius	*Nemertea* indet.
Anomia ephippium	*Spisula subtruncata*
Euclymene droebachiensis	*Ostrea edulis*
Cirratulus cirratus	

Table 4 Distinguishing species of the Mixed sediment with crustaceans, bivalves and polychaetes community complex.

ZOSTERA-DOMINATED COMMUNITY COMPLEX

This community complex occurs intertidally and subtidally within this site. An extensive intertidal *Zostera* bed is recorded almost continuously along the south shore from Derrymore island to west of Blennerville; while it is predominantly a Zostera *noltii* meadow, patches of *Zostera marina* are recorded within it at Derrymore Island. A number of small discrete intertidal beds of *Zostera noltii* also occur; these are recorded in inner Tralee Bay at Spa, in Cloghane Creek at Fermoyle and at Fahamore. Subtidally, beds of *Zostera marina* are recorded in outer Tralee Bay from Kilshannig Point to off the shore at Castlegregory and at Scraggane Point. It is recorded at depths of between 0m and 6m (Figure 5).

Intertidally, the substrate is that of fine material, with fine sand, very fine sand and silt-clay accounting for 99% of the sediment fractions; subtidally the sediment is slightly coarser with the fines fraction ranging from 65% to 92%.

This community is dominated in the intertidal by *Zostera noltii* and in the subtidal by *Zostera marina*. Intertidally the percentage cover of *Zostera noltii* is up to 95% to 100%, while

subtidally *Z. marina* is recorded here as frequent (6-11 individual per m^2) to abundant (>12 individual per m^2).

The gastropod *Peringia ulvae* is recorded in very high abundances within the intertidal meadows, with the bivalves *Cerastoderma edule* and *Macoma balthica* recorded in high abundance here. The epifaunal species associated with the subtidal meadows include the anthozoans *Anemonia viridis* and *Anthopleura balli,* the hermit crab *Pagurus bernhardus* with the associated anthozoan *Calliactis parasitica* or the hydroid *Hydractinia echinata.*

Densities of the polychaete *Arenicola marina* within the community range from 0-3m^{-2} intertidally. The bivalve *Ostrea edulis,* the nudibranchs *Doto coronata* and *Doto koenneckeri* and the sand goby *Pomatoschistus minutes* are also recorded subtidally, as is the hydroid *Laomedea angulata*. The infaunal species associated with the meadows include the polychaetes *Nephtys hombergii, Eteone longa, Pygospio elegans*, *Scolelepis foliosa* and *Euclymene droebachiensis*, the oligochaete *Tubificoides benedii*, the nemertean *Nemertea* sp., the flatworm *Turbellaria* sp., the bivalve *Anomia ephippium*, the gastropod *Antalis entalis* and the crustaceans *Aora gracilis, Perioculodes longimanus* and *Ampelisca brevicornis*.

Species associated with the *Zostera*-dominated community complex	
Zostera marina	*Pomatoschistus minutes*
Zostera noltii	*Spisula subtruncata*
Euclymene droebachiensis	*Anemonia viridis*
Aora gracilis	*Turbellaria* sp.
Nemertea indet.	*Anomia ephippium*
Pagurus bernhardus	*Carcinus maenas*
Scolelepis foliosa	*Peringia ulvae*
Ostrea edulis	*Macoma balthica*
Ampelisca brevicornis	*Cerastoderma edule*

Table 5 Species associated with the *Zostera*-dominated community complex.

MYTILUS-DOMINATED COMMUNITY

Intertidally, a mussel (*Mytilus edulis*) dominated community occurs in inner Tralee Bay, between the Derrymore Peninsula and the shore at Annagh Island (Figure 5). It is recorded on the seaward side of the seagrass meadows and also of the edge of small subtidal channels which occur here.

The conspicuous fauna recorded within these dense aggregations of *Mytilus edulis*, include the gastropod *Littorina littorea* and small individuals of the crab *Carcinus maenas*. The

barnacle *Balanus balanus* and the fucoid *Fucus vesiculosus* are recorded attached to the mussels (Table 6).

Species associated with the *Mytilus*-dominated community	
Mytilus edulis	*Fucus vesiculosus*
Gibbula umbilicalis	*Osilinus lineatus*
Cerastoderma edule	*Littorina littorea*
Balanus balanus	*Gammarus salinus*
Leptochiton asellus	

Table 6 Species associated with the *Mytilus*-dominated community.

SABELLARIA-DOMINATED COMMUNITY COMPLEX

This community complex is dominated by biogenic reef constructed by the polychaete *Sabellaria alveolata*. This distinctive honeycomb-like structure is recorded on Derrymore Strand where it occurs in the form of hummocks, standing proud of the substrate or is interspersed with the boulder reef (Figure 5).

Towards the northern end of the strand at Derrymore Bridge, this reef covers between 20% and 80% of the substrate while towards Bunawonder coverage is approximately 10% to 15%.

The green algae *Ulva intestinalis* occurs on the surface of the tubes, the brown algae *Fucus serratus* and *Fucus vesiculosus* are also recorded attached to the reef. The barnacle *Chthamalus montagui* is common while the gastropods *Patella vulgata* and *Patella depressa* also occur. Where sediment occurs, the polychaete *Arenicola marina* is recorded in densities of between 3 m^{-2} and 4 m^{-2} (Table 7).

Species associated with the *Sabellaria*-dominated community complex	
Sabellaria alveolata	*Ulva intestinalis*
Fucus vesiculosus	*Patella vulgata*
Fucus serratus	*Patella depressa*
Rhodothamniella floridula	

Table 7 Species associated with the *Sabellaria*-dominated community complex.

OSTREA EDULIS-DOMINATED COMMUNITY

The *Ostrea edulis* community is recorded in two distinct areas of the Tralee Bay; in the inner bay in the channel between Fenit and Spa and in the outer bay off the shore at Castlegregory (Figure 5). It occurs in depths of between 0m and 8m.

In the outer bay this community occurs in the area described as a mixed sediment with crustaceans, bivalves and polychaetes community complex; within the inner bay it is largely recorded from this community but its periphery occurs on the sand with *Nephtys cirrosa* community type. The distinguishing fauna for these groups are presented in tables 3 and 4.

INTERTIDAL REEF COMMUNITY COMPLEX

This community complex is recorded extensively within Tralee Bay from the Magharees Peninsula east to the inner reaches of the bay and around the northern shore to Barrow Harbour. It occurs on Banna Strand at Black Rock and also around the shores of Cloghane Creek and at Fermoyle Island (Figure 5). It occurs in an exposure regime ranging from exposed reef on the outer reaches of the Magharees Peninsula to sheltered within inner Tralee Bay. The substrate varies from sloping and flat bedrock to boulder and cobble shores.

The species associated with this complex include the brown algae *Pelvetia canaliculata, Fucus vesiculosus*, *Fucus spiralis, F. serratus, Ascophyllum nodosum, Himanthalia elongata* and *Laminaria digitata*. *Pelvetia canaliculata* is recorded in greatest abundance on the exposed shores in Scraggane Bay while *Ascophyllum nodosum* is abundant in the sheltered reefs within the inner Tralee Bay. The green alga *Ulva* sp. is abundant at a number of locations within Tralee Bay (Aughacasla Strand, Carrignamaud, Bunnahow and at Fermoyle Island). The lichens *Verrucaria maura* and *Verrucaria mucosa* are commonly recorded within the complex while yellow lichens (*Caloplaca* species) and the black lichen *Lichina pygmaea* are less frequent.

The limpets *Patella vulgata* and *P. depressa* are common throughout the complex, while the barnacle *Chthamalus montagui* is abundant within Tralee Bay. On the bedrock shores the bivalve *Mytilus edulis* occurs within the crevices. On the exposed intertidal reefs on the Magharee Peninsula, rock pools are covered by the encrusting algae *Lithothamnion* sp. and *Hildenbrandia rubra* (Table 8). Commonly occurring algae include *Mastocarpus stellatus, Palmaria palmata, Lomentaria articulata, Osmundea pinnatifida, Himanthalia elongata* and *Laminaria digitata*.

Other species present in this community include the anthozoans *Actinia equina* and *Actinia fragacea,* the sponge *Hymeniacidon perlevis* the brown algae *Leathesia difformis* and *Ahnfeltia plicata* and the red algae *Corallina officinalis, Plocamium cartilagineum and Ceramium rubens*. The barnacles *Chthamalus montagui*, *Chthamalus stellatus* and *Semibalanus balanoides* occur on the bedrock, with the bivalves *Mytilus edulis* and *Modiolus modiolus* recorded amongst the barnacles and crevices.

Species associated with the Intertidal reef community complex	
Pelvetia canaliculata	*Corallina officinalis*
Fucus spiralis	*Chthamalus montagui*
Porphyra umbilicaris	*Osilinus lineatus*
Gibbula umbilicalis	*Semibalanus balanoides*
Patella vulgata	*Mastocarpus stellatus*
Patella depressa	*Palmaria palmata*
Ascophyllum nodosum	*Lomentaria articulata*
Fucus serratus	*Actinia equina*
Himanthalia elongata	*Osmundea pinnatifida*
Lithothamnion sp	*Laminaria digitata*

Table 8 Species associated with the Intertidal reef community complex.

SUBTIDAL REEF COMMUNITY COMPLEX

This community complex occurs within Tralee Bay from Derrymore west to Aughacasla Point and in the centre of the bay from Little Samphire Island to Kilshannig Point. It is recorded extensively around the Magharees Peninsula from Kilshannig Point in the east to Corralougha Strand in the west (Figure 5). The substrate is that of flat or sloping bedrock, cobble/boulder flat or field or a mosaic of the two. It occurs in exposure regimes from sheltered to exposed reefs, in depths of between 0m and 30m.

The species associated with this community include a variety of red foliose algae including *Delesseria sanguinea, Callophyllis laciniata* and *Plocamium cartilagineum* as well as the brown algae *Dictyota dichotoma,* the coralline algae, the sponge *Cliona celata* and the echinoderms *Echinus esculentus* and *Marthasterias glacialis*. *P. cartilagineum* is recorded throughout the complex while *D. sanguinea* along with *Heterosiphonia plumosa* are more abundant in deeper waters (14m to 25m). The hermit crab *Pagurus bernhardus* is also recorded within the complex

In areas subjected to sand scour the red algae *Furcellaria lumbricalis* and *Polyides rotundus* are common. Where sand occurs amongst boulders the anthozoan *Anthopleura balli* and the hydroid *Sertularia cupressina* are recorded. The red alga *Chondrus crispus* is recorded east of Kilshannig Point.

Species associated with the Subtidal reef community complex	
Delesseria sanguinea	*Echinus esculentus*
Corallinaceae	*Cliona celata*
Plocamium cartilagineum	*Marthasterias glacialis*
Heterosiphonia plumosa	*Dictyota dichotoma*
Callophyllis laciniata	Corallinaceae

Table 9 Species associated with the Subtidal reef community complex.

LAMINARIA-DOMINATED COMMUNITY COMPLEX

An extensive area of this community complex is recorded off Coosanea in Brandon Bay, it also occurs in Scraggane Bay and off Illaunlea and Little Samphire Island. It occurs in water depths of between 0m and 10m in an exposure regime of exposed to sheltered reef (Figure 5). The substrate is that of flat or sloping bedrock, large boulders on gravel and cobbles with sediment.

The species associated with this community complex are the kelp species *Laminaria hyperborea* and *Saccharina latissima*, also the ascidians *Styela rustica*, *Polyclinum aurantium* and *Distomus variolosus*, the brown alga *Dictyota dichotoma,* coralline algae, the red algae*, Plocamium cartilagineum* and *Acrosorium ciliolatum,* the crustacean *Balanus crenatus* and the gastropod *Calliostoma zizyphinum* and the sponge *Sycon ciliatum.* Other species recorded within the complex included the hydroid *Obelia geniculata*, the bryozoan *Membranipora membranacea*, the poriferan *Cliona celata* and the brown algae *Halidrys siliquosa* (Table 10).

Species associated with the *Laminaria*-dominated community complex	
Dictyota dichotoma	*Balanus crenatus*
Saccharina latissima	*Calliostoma zizyphinum*
Plocamium cartilagineum	*Sycon ciliatum*
Acrosorium ciliolatum	*Urticina felina*
Corallinaceae	

Table 10 Species associated with the *Laminaria*-dominated 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 Tralee Bay and Magharees Peninsula, West to Cloghane 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	Maintain the extent of the *Mytilus*-dominated community and the *Zostera*-dominated and the *Sabellaria*-dominated community complexes, subject to natural processes.

- The *Mytilus*-dominated community *and Zostera*, and *Sabellaria*-dominated community complexes are considered to be keystone communities that are of considerable importance to the overall ecology and biodiversity of a habitat by virtue of their physical complexity. *Zostera* meadows serve as important nursery grounds for fish species. *Mytilus* communities are a considerable food source for a number of bird species and along with *Sabellaria* communities provide a diversity of habitats for a large number of other species.
- Any significant anthropogenic disturbance to the extent of these communities should be avoided.

- An interpolation of the likely distribution of these communities is provided in figure 5. the area given below is based on spatial interpolation and therefore should be considered indicative:
    - *Zostera*-dominated community complex – 241ha
    - *Mytilus*-dominated community – 12ha
    - *Sabellaria*-dominated community complex - 7ha

Target 3	Conserve the high quality of the *Zostera*-dominated community complex, subject to natural processes.

- It is important to ensure the quality as well as the extent of *Zostera*-dominated communities are conserved. For example, shoot density or percentage cover can provide an indication of the habitat quality as well as giving information on the habitat complexity and refuge capability; all important components in maintaining the structural and functional integrity of the habitat.

Target 4	Conserve the high quality of the *Mytilus*-dominated community, subject to natural processes.

- Every effort should be made to avoid any death to living *Mytilus edulis*.
- Any significant anthropogenic disturbance to the quality (e.g. living individual/m^2) of the community should be avoided.

Target 5	Conserve the high quality of the *Sabellaria*-dominated community complex, subject to natural processes.

- Every effort should be made to avoid any death to living *Sabellaria alveolata*.
- Any significant anthropogenic disturbance to the quality of the community should be avoided.

Target 6	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Sand with *Nephtys cirrosa* community complex and the *Ostrea edulis*-dominated community.

- A semi-quantitative description of these community types has been provided in Section 1.
- An interpolation of their likely distribution is provided in figure 5.
- The estimated areas of these community types 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:
    - Sand to sandy mud with polychaetes and bivalves community complex – 915ha
    - Sand with *Nephtys cirrosa* community complex – 506ha
    - *Ostrea edulis*-dominated community - 4ha

- 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 Tralee Bay and Magharees Peninsula, West to Cloghane 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	Maintain the extent of the *Zostera*-dominated community complex and the *Mytilus*-dominated community, subject to natural processes.

- The *Zostera*-dominated community complex and *Mytilus* dominated community are considered to be keystone communities that are of considerable importance to the overall ecology and biodiversity of a habitat by virtue of their physical complexity. *Zostera* meadows serve as important nursery grounds for fish species. *Mytilus* communities are a considerable food source for a number of bird species and also provide biodiverse habitat for a large number of other species.
- Any significant anthropogenic disturbance to the extent of these communities should be avoided.
- An interpolation of the likely distribution of these communities is provided in figure 5. the area given below is based on spatial interpolation and therefore should be considered indicative:

- *Zostera*-dominated community complex – 65ha
- *Mytilus*-dominated community – 1ha

Target 3	Conserve the high quality of the *Zostera*-dominated community complex, subject to natural processes.

- It is important to ensure the quality as well as the extent of *Zostera*-dominated communities is conserved. For example, shoot density or percentage cover can provide an indication of the habitat quality as well as giving information on the habitat complexity and refuge capability; all important components in maintaining the structural and functional integrity of the habitat.

Target 4	Conserve the high quality of the *Mytilus*-dominated community, subject to natural processes.

- Every effort should be made to avoid any death to living *Mytilus edulis*.
- Any significant anthropogenic disturbance to the quality (e.g. living individual/m^2) of the community should be avoided.

Target 5	Conserve the following community types a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Mixed sediment with crustaceans, bivalves and polychaetes community complex; Intertidal reef 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 5.
- The estimated area of these community types within the Estuaries habitat given below is based on spatial interpolation and therefore should be considered indicative:
  - Sand to sandy mud with polychaetes and bivalves community complex - 172ha
  - Mixed sediment with crustaceans, bivalves and polychaetes community complex – 28ha
  - Intertidal reef community complex - 22ha
- 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.

Objective **To maintain the favourable conservation condition of Large shallow inlets and bays in Tralee Bay and Magharees Peninsula, West to Cloghane 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 habitats of Mudflats and sandflats not covered by sea water at low tide and Reefs. Targets for these habitats should 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	Maintain the extent of the *Mytilus*-dominated community and the *Zostera*-dominated and the *Sabellaria*-dominated community complexes, subject to natural processes.

- *Zostera*, *Mytilus*, and *Sabellaria*-dominated communities are considered to be keystone communities that are of considerable importance to the overall ecology and biodiversity of a habitat by virtue of their physical complexity. *Zostera* meadows serve as important nursery grounds for fish species. *Mytilus* communities are a considerable food source for a number of bird species and along with *Sabellaria* communities provide a diversity of habitats for a large number of other species.
- Any significant anthropogenic disturbance to the extent of these communities should be avoided.
- An interpolation of the likely distribution of these communities is provided in figure 5. the area given below is based on spatial interpolation and therefore should be considered indicative:
  - *Zostera*-dominated community complex – 350ha
  - *Mytilus*-dominated community – 11ha
  - *Sabellaria*-dominated community complex - 7ha

Target 3	Conserve the high quality of the *Zostera*-dominated community complex, subject to natural processes.

- It is important to ensure the quality as well as the extent of Zostera-dominated community is conserved. For example, shoot density or percentage cover can provide an indication of the habitat quality as well as giving information on the habitat complexity and refuge capability; all important components in maintaining the structural and functional integrity of the habitat.

Target 4	Conserve the high quality of the *Mytilus*-dominated community, subject to natural processes.

- Every effort should be made to avoid any death to living *Mytilus edulis*.
- Any significant anthropogenic disturbance to the quality (e.g. living individual/m^2) of the community should be avoided.

Target 5	Conserve the high quality of the *Sabellaria*-dominated community complex, subject to natural processes.

- Every effort should be made to avoid any death to living *Sabellaria alveolata*.
- Any significant anthropogenic disturbance to the quality of the community should be avoided.

Target 6	Conserve the following community types in a natural condition: Sand to sandy mud with polychaetes and bivalves community complex; Sand with *Nephtys cirrosa* community complex; Mixed sediment with crustaceans, bivalves and polychaetes community complex; *Ostrea edulis*-dominated community; Intertidal reef community complex; Subtidal reef community complex and *Laminaria*-dominated reef 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 5.
- The estimated areas of these communities given below are based on spatial interpolation and therefore should be considered indicative:
  - Sand to sandy mud with polychaetes and bivalves community complex - 767ha
  - Sand with *Nephtys cirrosa* community complex - 2435ha
  - Mixed sediment with crustaceans, bivalves and polychaetes community complex – 2992ha
  - *Ostrea edulis*-dominated community - 650ha
  - Intertidal reef community complex - 199ha
  - Subtidal reef community complex – 2499ha

- *Laminaria*-dominated reef community complex - 117ha

- 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 Reefs in Tralee Bay and Magharees Peninsula, West to Cloghane SAC, which is defined by the following list of attributes and targets**

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

- The area of this habitat represents the minimum estimated area of reef at this site and underestimates the actual area due to the many areas of sheer and steeply sloping rock within the reef habitat.
- 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 distribution of reefs is stable or increasing, subject to natural processes.

- The likely distribution of reef habitat in this SAC is indicated in figure 4.
- This target refers to activities or operations that propose to permanently remove reef habitat, thus reducing the range over which this habitat occurs within the site. It does not refer to long or short term disturbance of the biology of reef habitats.
- Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 3	Maintain the extent of the *Mytilus*-dominated community and the *Sabellaria*-dominated community complex, subject to natural processes.

- The *Mytilus*-dominated community and *Sabellaria*-dominated community complex are considered to be keystone communities that are of considerable

importance to the overall ecology and biodiversity of a habitat by virtue of their physical complexity. *Mytilus* communities are a considerable food source for a number of bird species

- Any significant anthropogenic disturbance to the extent of these communities should be avoided.
- An interpolation of the likely distribution of these communities is provided in figure 5. the area given below is based on spatial interpolation and therefore should be considered indicative:
  - *Mytilus*-dominated community – 12ha
  - *Sabellaria*-dominated community complex – 7ha

Target 4	Conserve the high quality of the *Mytilus*-dominated community, subject to natural processes.

- Every effort should be made to avoid any death to living *Mytilus edulis*.
- Any significant anthropogenic disturbance to the quality (e.g. living individual/m^2) of the community should be avoided.

Target 5	Conserve the high quality of the *Sabellaria*-dominated community complex, subject to natural processes.

- Every effort should be made to avoid any death to living *Sabellaria alveolata*.
- Any significant anthropogenic disturbance to the quality of the community should be avoided.

Target 6	Conserve the following community types in a natural condition: Intertidal reef community complex, Subtidal reef community complex and *Laminaria*-dominated reef 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 5.
- The estimated areas of the communities within the Reefs habitat given below are based on spatial interpolation and therefore should be considered indicative. In addition, as this habitat contains significant areas of sheer and steeply sloping rock, the mapped community extents will be underestimated:
  - Intertidal reef community complex - 221ha
  - Subtidal reef community complex - 2499ha
  - *Laminaria*-dominated reef community complex - 117ha
- This target relates to the structure and function of the reef and therefore it is of relevance to those activities that may cause disturbance to the ecology of the habitat.

- 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.

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Figure 1. Extent of Mudflats and sandflats not covered by seawater at low tide in Tralee Bay and Magharees Peninsula, West to Cloghane SAC

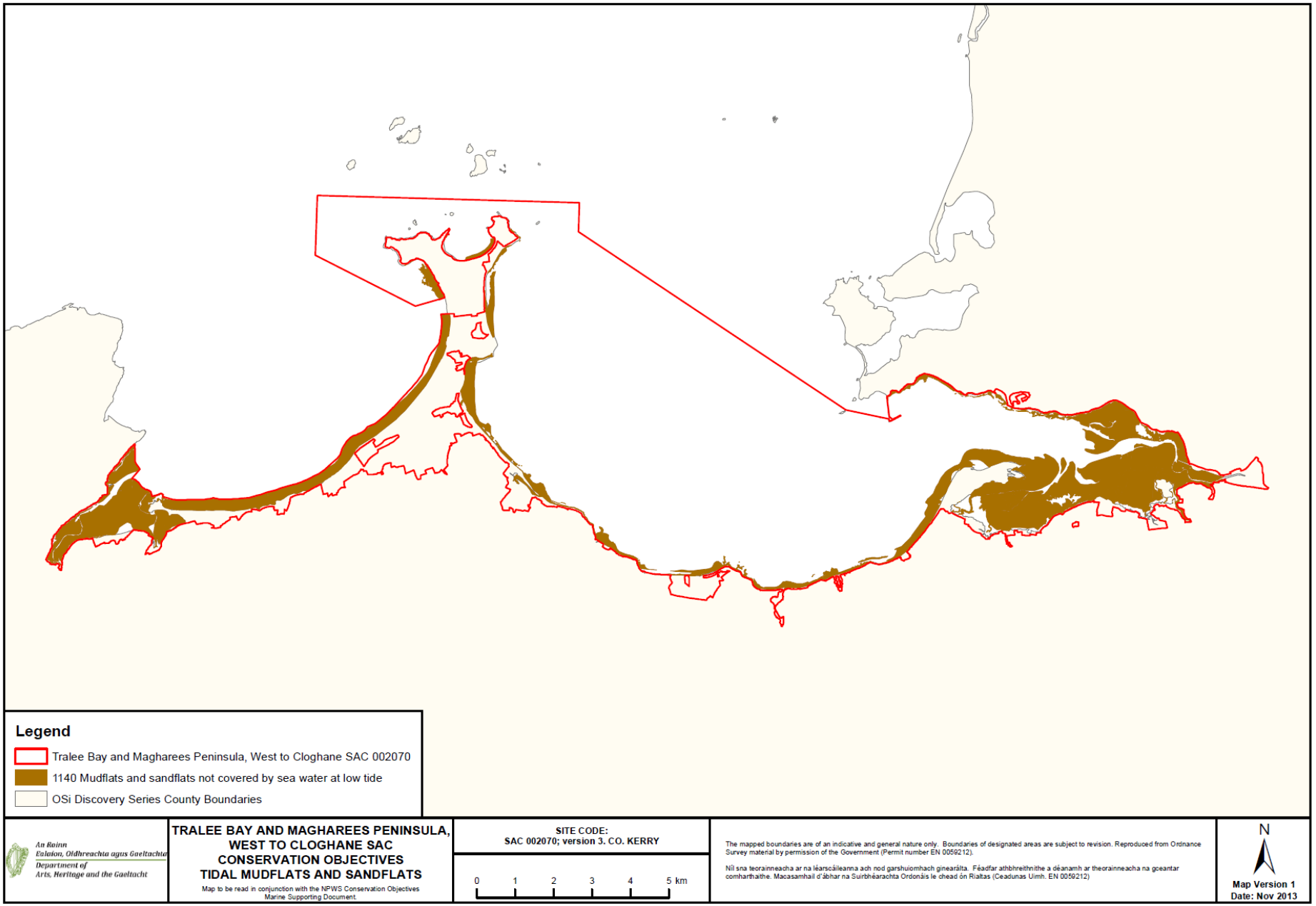

Figure 2. Extent of Estuaries in Tralee Bay and Magharees Peninsula, West to Cloghane SAC

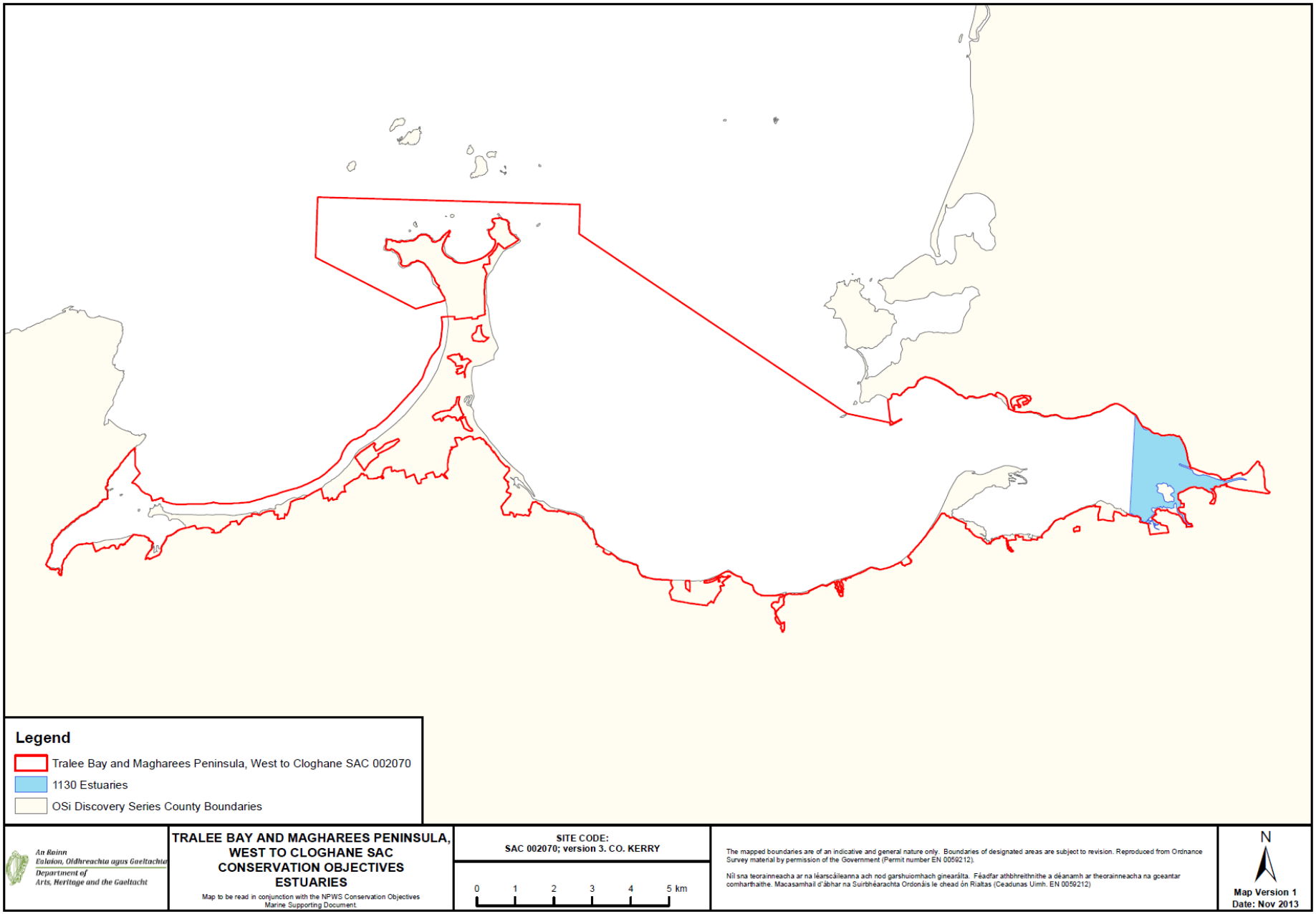

Figure 3. Extent of Large shallow inlets and bays in Tralee Bay and Magharees Peninsula, West to Cloghane SAC

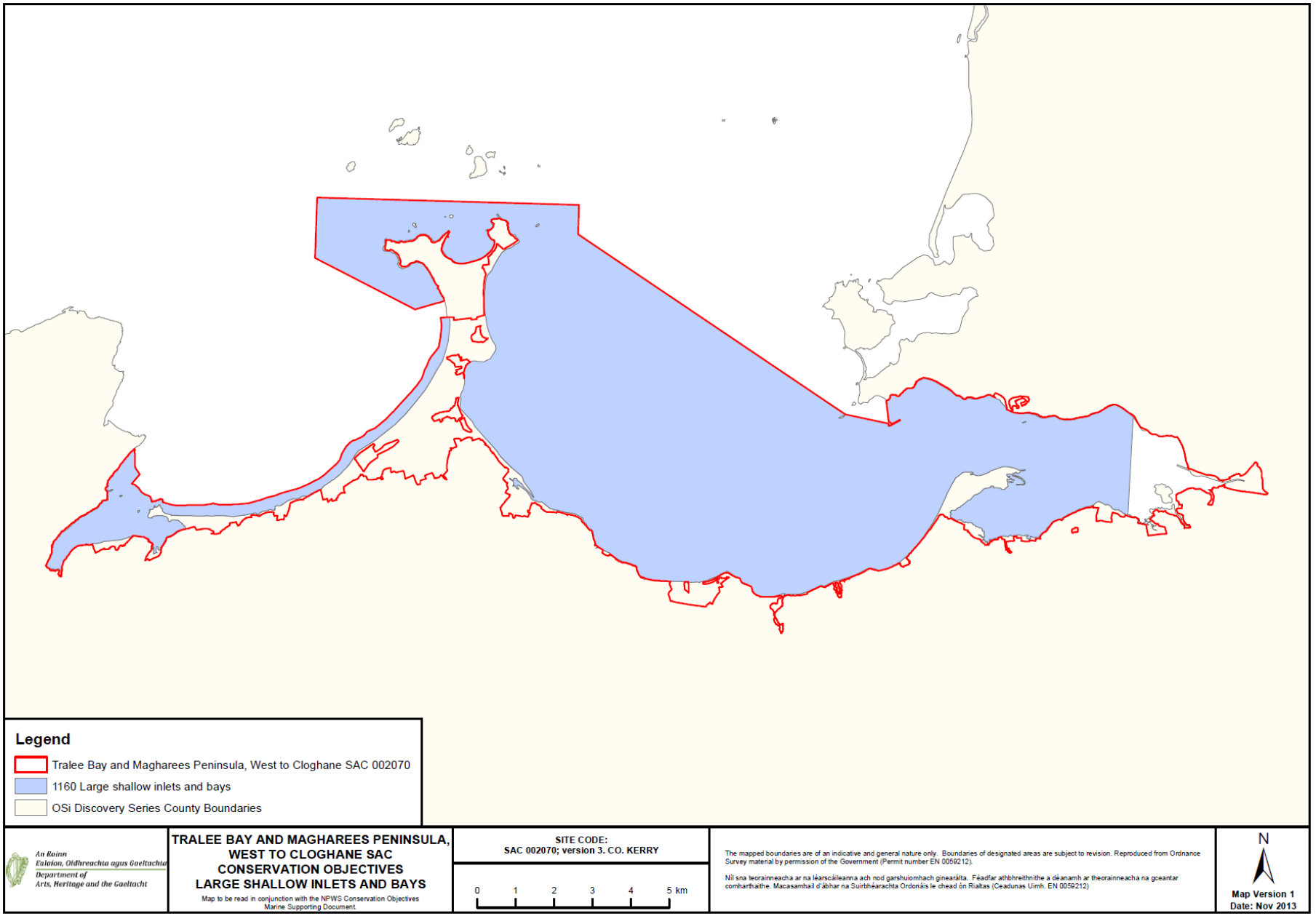

Figure 4. Extent of Reefs in Tralee Bay and Magharees Peninsula, West to Cloghane SAC

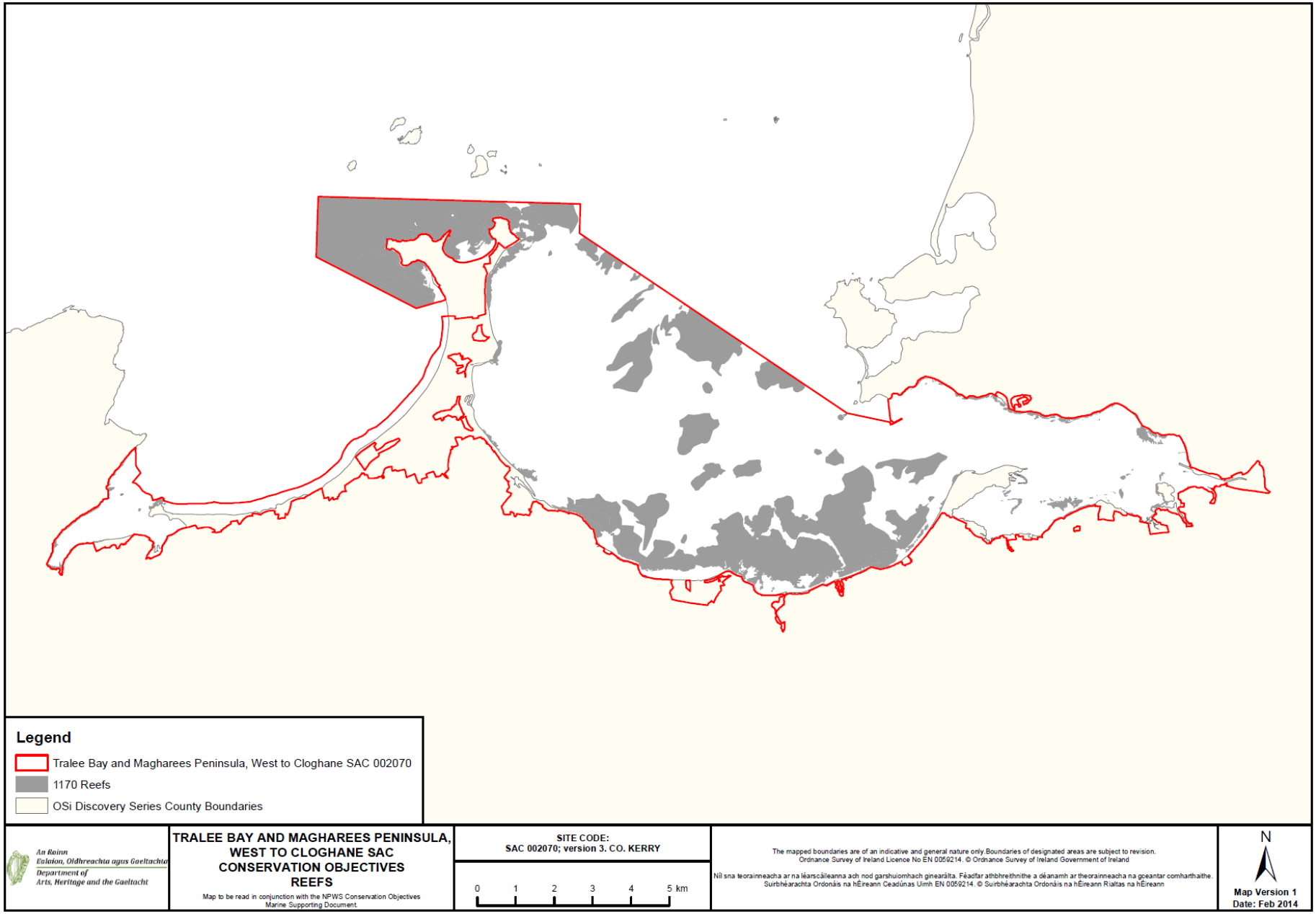

Figure 5a. Distribution of community types in Tralee Bay and Magharees Peninsula, West to Cloghane SAC and Tralee Bay Complex SPA

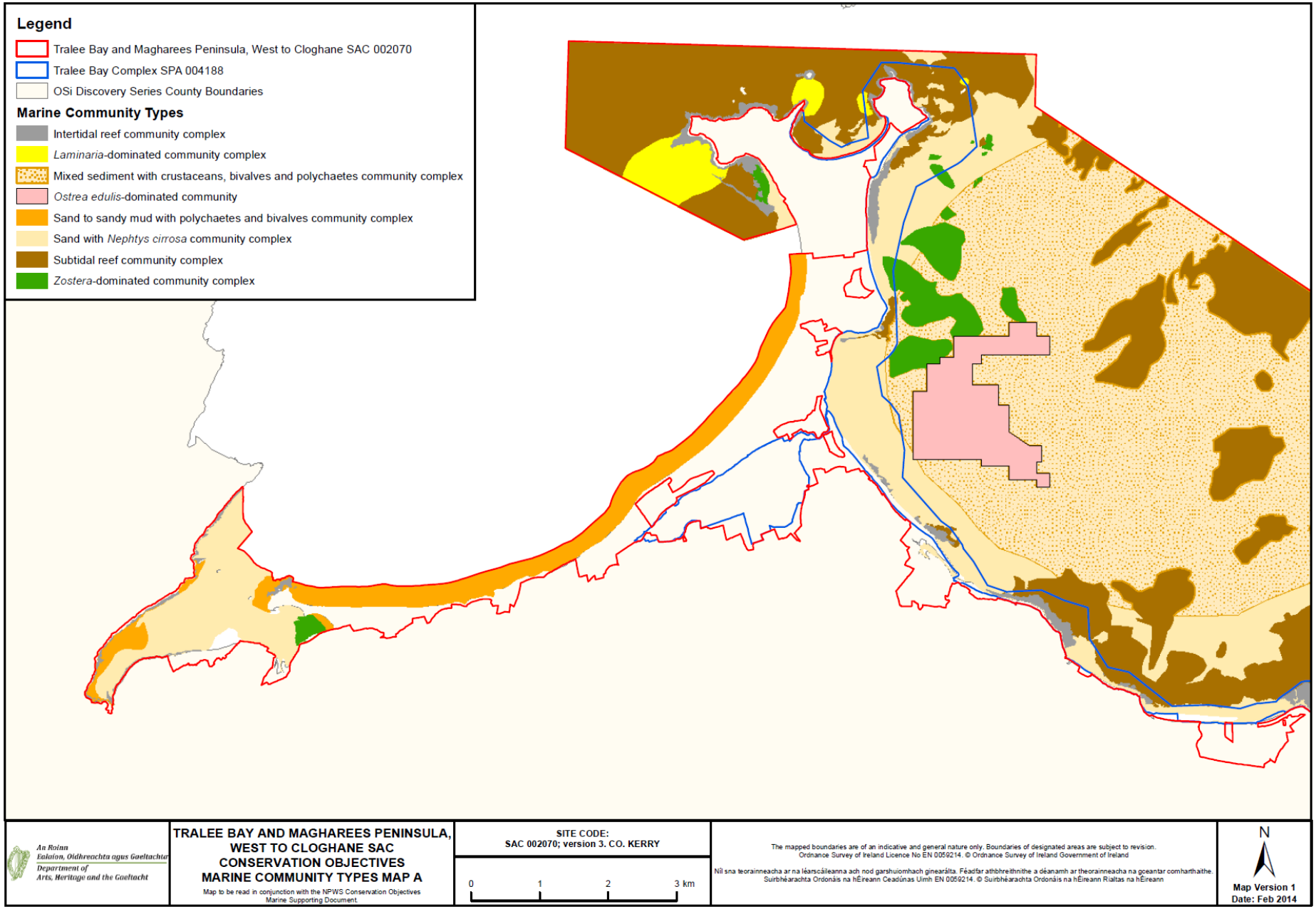

Figure 5b. Distribution of community types in Tralee Bay and Magharees Peninsula, West to Cloghane SAC and Tralee Bay Complex SPA