NPWS (2012)

Valencia Harbour/Portmagee Channel SAC
(site code: 2262)

Conservation objectives supporting document - marine habitats

Version 1

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Introduction

Valencia Harbour/Portmagee Channel SAC is designated for the Annex I qualifying interests of Large shallow inlets and bays; Reefs; and Mudflats and sandflats not covered by seawater at low tide (Figures 1, 2, and 3). The Annex I habitat Large shallow inlets and bays is a large physiographic feature that may wholly or partly incorporate other Annex I habitats including Reefs and Mudflats and sandflats.

Intertidal and subtidal habitat surveys of Valencia Harbour/Portmagee Channel SAC were undertaken in 2002 (Aquafact, 2003) and 2010 (APEM, 2011; Aquafact, 2011a; Aquafact, 2011b), in addition to the BioMar survey that was undertaken in 1995 (Picton & Costello, 1997). In 2007, two dive surveys were carried out to map the distribution of the rare anemone *Edwardsia delapiae* (MERC, 2007a) and the sensitive communities at this site (MERC, 2007b). The data from all of these surveys were used to investigate the physical and biological structure of this bay.

Aspects of the biology and ecology of 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 the Valencia Harbour/Portmagee Channel SAC 11 community types are recorded; the Annex I habitats in which they occur are presented in Table 1 and a description of each of the community types is given below.

Community Type	Habitat		
	Mudflats and sandflats not covered by seawater at low tide (1140)	Large shallow inlets and bays (1160)	Reefs (1170)
Intertidal sand with nematodes and polychaetes community complex	✓	✓	
Medium to fine sand with *Nephtys cirrosa* and *Spiophanes bombyx* community complex	✓	✓	
Maërl-dominated community		✓	
Zostera-dominated community		✓	
Edwardsia delapiae associated community		✓	
Coarse sediment with *Pisione remota* community complex		✓	
Sandy mud to mixed sediment with *Melinna palmata* community complex		✓	
Mixed sediment with *Chaetozone gibber* community complex		✓	
Fucus-dominated intertidal reef community complex		✓	✓
Laminaria-dominated community		✓	✓
Echinoderm-dominated reef community complex		✓	✓

Table 1 The community types recorded in Valencia Harbour/Portmagee Channel SAC and the Annex I habitats in which they occur.

Estimated areas of each community type per Annex I habitat, based on interpolation, are given in the objective targets in Section 2.

The development of a community complex target arises when an area possesses similar abiotic features but records a number of biological communities that are not regarded as being sufficiently

stable and/or distinct temporally or spatially to become the focus of conservation efforts. In this case, examination of the available data from Valencia Harbour/Portmagee Channel 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.

INTERTIDAL SAND WITH NEMATODES AND POLYCHAETES COMMUNITY COMPLEX

This intertidal community complex is recorded in the northern part of the site at Ballycarbery, to the east and north of Laght Point, on the southeast shore of Beginish Island and on Valencia Island at Trabaun; in the southeast of the site it occurs from Lough Mark and the Derreen River and at Carrignavegagh and the Gougane River (Figures 4a, 4c and 4d).

The sediment of this community complex is that of sand with considerable variation in the constituent fractions; very coarse sand ranges from 15.1 to 0%, coarse sand from 17.4 to 0.1%, medium sand from 75.9 to 4.7% and fine sand from 88.3 to 8.8%. The very fine sand and the silt-clay fractions are generally <6% and <23% respectively; however in the inner reaches of the inlet at Ballycarbery and in the Derreen River increased levels of fine material are recorded (35 to 18% and 27 to 19% for very fine sand and the silt-clay, respectively). Gravel generally accounts for <3% of the sediment, however in the south of the complex at the Derreen River and Gougane River and at Portmagee this rises to between 30% and 48%. Fine sand generally accounts for greater than 32% of the sediment, except where the gravel fraction is elevated and in the northeast of the site.

Nematodes generally occur in moderate abundances throughout the site, the polychaetes *Scoloplos armiger* and *Pygospio elegans* are recorded in moderate to low abundances but are locally abundant at Laght Point and at Ballycarbery The polychaete *Mediomastus fragilis*, the oligochaete *Tubificoides benedii* and the bivalve *Cerastoderma edule* occur in low abundances throughout the complex, but are locally abundant at Lough Mark and the tidal flats at the Derreen River and the Gougane River. The polychaete *Arenicola marina* occurs throughout this community complex in densities of 5 to 10m^{-2}, while the tube dwelling polychaete *Sabella pavonina* and the phoronid *Phoronis* sp.[1] are recorded at Lough Mark. To the north of Laght Point the diversity of the fauna is reduced and here the polychaete *Malacoceros tetracerus* is numerically dominant. (Table 2).

[1] The rare phoronid *Phoronis psammophila* has been recorded by the BioMar survey in Valencia Harbour/Portmagee Channel area. It was recorded in sandy sediments from the intertidal to depths of 18m. This species is not recorded in elsewhere in Ireland or Great Britain. However the species has not been confirmed during the 2010 survey.

Distinguishing species of the Intertidal sand with nematodes and polychaetes community complex	
Nematoda spp.	*Cerastoderma edule*
Scoloplos armiger	*Arenicola marina*
Pygospio elegans	*Sabella pavonina*
Nephtys hombergii	*Phoronis* sp.
Mediomastus fragilis	*Malacoceros tetracerus*
Tubificoides benedii	

Table 2 Distinguishing species of the Intertidal sand with nematodes and polychaetes community complex.

MEDIUM TO FINE SAND WITH *NEPHTYS CIRROSA* AND *SPIOPHANES BOMBYX* COMMUNITY COMPLEX

This predominately subtidal community complex is recorded extensively in Doulus Bay and off Trabaun in the northern part of the site and between Bray Head and Bull Rock including Foilhomurrin Bay at the south-western extreme of the site. It occurs in depths of between 5m and 20m. An intertidal variant of this community complex occurs on Beginish Island (Figures 4a, 4b and 4d).

The sediment of this community complex is that of medium to fine sand. In general, medium sand comprises greater than 27% and fine sand greater than 26% of the sediment throughout the community complex with silt-clay accounting for less than 9%. However, in Lough Kay the silt-clay content accounts for 97.1% of the sediment, with negligible amounts of fine sand (0.2%) and medium sand (0%); gravel and very coarse sand account for less than 3% of the sediment.

The distinguishing fauna of this community complex includes the polychaetes *Nephtys cirrosa*, *Spiophanes bombyx* and *Owenia fusiformis* which are recorded in moderate abundances throughout the community complex, and the amphipod *Bathyporeia nana* which is locally abundant in the northeast of Doulus Bay. The crustaceans *Iphinoe trispinosa*, *Pontocrates arenarius*, *Bathyporeia* sp. and *Synchelidium maculatum*, the polychaete *Chaetozone christiei*, the bivalve *Tellina fabula* and unidentified nemerteans are recorded in low abundances throughout the community complex. In Foilhomurrin Bay, the polychaetes *Caulleriella alata*, *Spio decorata* and *Mediomastus fragilis*, the oligochaete *Tubificoides benedii* and the amphipod *Urothoe elegans* are locally very abundant (Table 3).

In the intertidal variant the polychaetes *Nephtys cirrosa*, *Travisia forbesii* and *Owenia fusiformis* and the bivalve *Angulus tenuis* are recorded in low abundance; while the phoronid *Phoronis* sp.[1] and the bivalve *Ensis ensis* are recorded south of Canroe.

[1] The rare phoronid *Phoronis psammophila* has been recorded by the BioMar survey in Valencia Harbour/Portmagee Channel area. It was recorded in sandy sediments from the intertidal to depths of 18m. This species is not recorded in elsewhere Ireland or Great Britain. However the species has not been confirmed during the 2010 survey

Distinguishing species of the Medium to fine sand with *Nephtys cirrosa* and *Spiophanes bombyx* community complex	
Nephtys cirrosa	Nemertea sp.
Spiophanes bombyx	*Travisia forbesii*
Owenia fusiformis	*Angulus tenuis*
Bathyporeia nana	*Ensis ensis*
Iphinoe trispinosa	*Caulleriella alata*
Pontocrates arenarius	*Spio decorata*
Bathyporeia sp.	*Mediomastus fragilis*
Synchelidium maculatum	*Tubificoides benedii*
Chaetozone christiei	*Urothoe elegans*
Tellina fabula	*Phoronis* sp.

Table 3 Distinguishing species of the Medium to fine sand with *Nephtys cirrosa* and *Spiophanes bombyx* community complex.

MAËRL-DOMINATED COMMUNITY

This community is recorded in the Portmagee Channel from Reenarea Point to the western extreme of the channel in depths of between 0m and 10m (Figures 4d).

The community is composed of the maërl species *Lithothamnion corallioides* and *Phymatolithon calcareum* which form dense beds at this site.

The fauna is dominated by the crustaceans *Caprella acanthifera*, *Janira maculosa*, *Caprella linearis*, *Othomaera othonis*, *Socarnes erythrophthalmus*, *Phtisica marina* and *Monocorophium sextonae* and the polychaete *Pomatoceros lamarcki*, all of which occur in very high abundances here. The crustaceans *Pisidia longicornis*, *Autonoe denticarpus*, *Erichthonius punctatus* and *Lysianassa ceratina* and the polychaete *Polyophthalmus pictus* are recorded in high abundances while the echinoderm *Amphipholis squamata* and the polychaete *Glycera lapidum* are recorded in moderate abundances here (Table 4).

Conspicuous species such as the actinarian *Anemonia viridis*, the asteroids *Marthasterias glacialis* and *Asterias rubens*, the crustacean *Pagurus bernhardus* and the bivalve *Pecten maximus* occur in this community. The tube dwelling polychaetes *Lanice conchilega* and *Sabella pavonina* are also recorded here.

Distinguishing species of the Maërl-dominated community	
Lithothamnion corallioides	*Polyophthalmus pictus*
Phymatolithon calcareum	*Gammaropsis lobata*
Caprella acanthifera	*Erichthonius punctatus*
Janira maculosa	*Amphipholis squamata*
Caprella linearis	*Glycera lapidum*
Othomaera othonis	*Platynereis dumerilii*
Socarnes erythrophthalmus	*Pomatoceros triqueter*
Phtisica marina	*Nemertea indet.*
Monocorophium sextonae	*Anemonia viridis*
Pomatoceros lamarcki	*Gammaropsis lobata*
Microdeutopus anomalus	*Marthasterias glacialis*
Lysianassa ceratina	*Asterias rubens*
Autonoe denticarpus	*Pagurus bernhardus*
Pisidia longicornis	*Pecten maximus*

Table 4 Distinguishing species of Maërl-dominated community.

ZOSTERA-DOMINATED COMMUNITY

This subtidal community dominated by the seagrass *Zostera marina* is recorded in four locations at this site namely, Knight's Town Harbour, Glanleam Bay, in the embayment southeast of Beginish Island and off Reencaheragh at the western extreme of Portmagee Channel. This community is recorded from depths of between 2m and 8m on a sandy substrate (Figures 4a, 4b and 4d).

Within this community the density of *Z. marina* is variable. It is most dense off Beginish Island where it is generally described as being abundant (12 individuals per m^2) to frequent (6-11 individuals per m^2). It is recorded as frequent to occasional (2-5 individuals per m^2) off Knight's Town Harbour, at Glanleam Bay and off Reencaheragh.

The anemone *Anemonia viridis*, the crustacean *Pagurus bernhardus*, the asteroid *Marthasterias glacialis*, the cnidarian *Haliclystus auricula* and the tube dwelling polychaetes *Lanice conchilega* and *Sabella pavonina* all occur here. At Beginish Island, occurrences of the rare actinarian *Edwardsia delapiae* have been recorded (Table 5).

Distinguishing species of the *Zostera*-dominated community	
Zostera marina	*Haliclystus auricula*
Anemonia viridis	*Ascidiella aspersa*
Pagurus bernhardus	*Cereus pedunculatus*
Marthasterias glacialis	

Table 5 Distinguishing species of the *Zostera*-dominated community.

EDWARDSIA DELAPIAE ASSOCIATED COMMUNITY

Valencia Harbour is the type locality (i.e. the place where a species was first found and recognised as a new species) and the only site in the world from which the burrowing anemone *Edwardsia delapiae* has been recorded. It was first recorded in the 1920's from an area of foreshore west of the present day location of the lifeboat slipway at Knight's Town (Carlgren & Stephenson, 1928). The BioMar survey of Valencia Harbour and Portmagee Channel in 1995 found new records of this species from an area of subtidal seabed southeast of the harbour at Knight's Town; a further series of dives conducted during the broadscale mapping survey in 2002 confirmed the presence of *E. delapiae* in the same general area as the 1995 records. The specific dive survey undertaken in 2007 to assess the distribution of this species recorded it from two new locations within Valencia Harbour. The first is south of Beginish Island and second on the south-eastern side of the shallow area of seabed known as The Foot at Knight's Town Harbour (Figures 4a and 4b). However this survey could not confirm the presence of this species at either the first location from which it was described or the BioMar/broadscale mapping locations.

The sediment of the 2007 sites is characterised by muddy sand with a patchy veneer of pea gravel. *Edwardsia delapiae* was observed to occur close to the perimeter of *Zostera marina* beds in water depths of between 4m and 9m. The previous sites were identified by the broadscale mapping survey as being that of sandy mud to muddy sand.

The sites where *Edwardsia delapiae* has been recorded harbour a rich infauna with burrowing anemones, including the rare *Scolanthus callimorphus*. The delicate seapen *Virgularia mirabilis* is recorded throughout while the rare opisthobranch *Haminoea navicula* which is only recorded from two other locations in Ireland (Mulroy Bay and Clifden Bay) occurs to the southeast of Knight's Town. Bivalves including *Pecten maximus* are also recorded from the Knight's Town area (Table 6).

Species occurring in the *Edwardsia delapiae* associated community	
Sagartiogeton laceratus	*Cereus pedunculatus*
Cerianthus lloydii	*Sagartiogeton undatus*
Myxicola infundibulum	*Lanice conchilega*
Haminoea navicula	*Halcampa chrysanthellum*
Philine aperta	*Myxicola infundibulum*
Pecten maximus	*Megalomma vesiculosum*
Virgularia mirabilis	*Edwardsia delapiae*
Zostera marina	*Scolanthus callimorphus*
Metridium senile	*Edwardsia claparedii*
Anthopleura ballii	

Table 6 Species occurring in the *Edwardsia delapiae* associated community.

COARSE SEDIMENT WITH *PISIONE REMOTA* COMMUNITY COMPLEX

This subtidal community complex occurs in the Portmagee Channel from due east of Reenarea Point to the south-western boundary of the site and in Doulus Bay northeast of Beginish Island (Figures 4a and 4d). It occurs in water depths of between 5m and 40m.

The substrate of this community complex is that of coarse sediment with gravel ranging from 50% to 0%, very coarse sand from 32.1 to 0% and coarse sand from 69.3 to 14.9%. Fine material is negligible (<1%).

The fauna of this community complex is distinguished by the presence of the polychaetes *Pisione remota, Glycera lapidum, Polygordius* sp. and *Aonides pauchibranchiata* and unidentified nemerteans, all of which are recorded in high to very high abundances here. The polychaetes *Protodorvillea kefersteini* and *Syllis* sp. H are recorded in high to moderate abundances. The oligochaetes Enchytraeidae, the polychaetes *Kefersteinia cirrata*, *Syllis* sp. E and *Owenia fusiformis* and the echinoderm *Echinocyamus pusillus* are recorded in moderate to low abundances here. The polychaetes *Polyophthalmus pictus* and *Malmgreniella ljungmani* are locally abundant at Reencaheragh, Nematoda are locally abundant to the south of Bray Head and the polychaete *Streptodonta pterochaeta* is locally abundant east of Lamb Island. The polychaetes *Mediomastus fragilis* and *Sphaerosyllis bulbosa* occur in low abundances throughout the community complex, but are recorded in high abundances off Reencaheragh. The polychaetes *Hesionura elongata*, *Aponuphis bilineata* and *Eteone longa/flava* and the molluscs *Angulus pygmaea*, *Euspira pulchella* and *Gari tellinella* are also recorded within this community (Table 7).

Within Doulus Bay, a variant of this community complex occurs in which the polychaetes *Pisione remota, Glycera lapidum, Polygordius* sp. and *Aonides pauchibranchiata* and unidentified

nemerteans are present in low abundances. This species-poor variant is associated with the finer sediment that occurs here with fine sand accounting for 82% of the sediment and medium sand 12%; coarse material is negligible (1%).

Distinguishing species of the Coarse sediment with *Pisione remota* community complex	
Pisione remota	*Hesionura elongata*
Glycera lapidum	*Aponuphis bilineata*
Polygordius sp.	*Eteone longa/flava*
Aonides pauchibranchiata	*Angulus pygmaea*
Nemertea	*Euspira pulchella*
Enchytraeidae	*Gari tellinella*
Protodorvillea kefersteini	*Polyophthalmus pictus*
Syllis sp. H	*Malmgreniella ljungmani*
Kefersteinia cirrata	Nematoda
Syllis sp. E	*Streptodonta pterochaeta*
Owenia fusiformis	*Mediomastus fragilis*
Echinocyamus pusillus	*Sphaerosyllis bulbosa*

Table 7 Distinguishing species for Coarse sediment with *Pisione remota* community complex.

SANDY MUD TO MIXED SEDIMENT WITH *MELINNA PALMATA* COMMUNITY COMPLEX

This subtidal community complex is widespread in Valencia Harbour to the eastern boundary of the site at Foughil Island and south beyond Reenglass Point; it occurs in Portmagee Channel at Gortreagh (Figures 4a to 4d). It is recorded in water depths of between 0m and 10m.

The sediment of this community ranges from sandy mud to mixed sediment. Sandy mud is recorded from south of Beginish Island through the channel at Knight's Town and in the shallow water (<8m) off Reenglass Point; it also occurs off Gortreagh. Mixed sediment is recorded in the Valencia River Channel at the eastern boundary of the site, off Church Island and in deeper water (>8m) south of Reenard Point.

As a result of the variability of the sediment types within this complex, the range of the individual sediment fractions is very broad. Gravel ranges from 83.3 to 0%, very coarse sand from 8.7 to 0%, coarse sand from 22.5 to 0.1%, medium sand from 50.9 to 1.7%, fine sand from 57.9 to 3%, very fine sand from 23.7 to 0.1% and silt-clay from 75.6 to 2.4 %. The gravel component is generally less than 22% within this complex. However, in the Valencia River Channel and in the area between Beginish Island, Knight's Town and Reenard Point, where stronger hydrodynamic conditions prevail, the proportion of gravel within the sediment is higher (ranging from 83 to 42%)

with a corresponding decrease in the silt-clay fraction (between 17 and 2% compared with 75 to 54% over the remainder of this complex). Boulders are also recorded within this area.

This community complex is distinguished by the polychaete *Melinna palmata* which occurs in high to moderate abundances throughout the community complex. The polychaetes *Praxillella affinis*, *Euclymene oerstedii* and *Owenia fusiformis*, the bivalves *Thyasira flexuosa* and *Abra alba*, the crustaceans *Phtisica marina* and *Metaphoxus fultoni* are recorded in moderate abundances here. Where the sediment is coarser, the polychaetes *Polyophthalmus pictus*, *Notomastus latericeus*, *Mediomastus fragilis*, *Platynereis dumerilii* and *Caulleriella alata* and bivalves of the family Veneridae are locally abundant. Very high abundances of the crustaceans *Phtisica marina* and *Caprella linearis* are recorded southeast of Knight's Town (Table 8).

The polychaetes *Diplocirrus glaucus*, *Galathowenia oculata*, *Lumbrineris gracilis, Tharyx killariensis* and *Nephtys hombergii*, the amphipod *Harpinia antennaria*, unidentified nemerteans and the bivalve *Kurtiella bidentata* also occur here.

Distinguishing species of the Sandy mud to mixed sediment with *Melinna palmata* community complex	
Melinna palmata	*Phtisica marina*
Praxillella affinis	*Eudorella truncatula*
Thyasira flexuosa	*Metaphoxus fultoni*
Diplocirrus glaucus	*Abra alba*
Galathowenia oculata	*Polyophthalmus pictus*
Lumbrineris gracilis	*Notomastus latericeus*
Tharyx killariensis	*Mediomastus fragilis*
Harpinia antennaria	*Platynereis dumerilii*
Nemertea	*Caulleriella alata*
Kurtiella bidentata	Veneridae
Euclymene oerstedii	*Nephtys hombergii*
Leiochone johnstoni	*Caprella linearis*
Owenia fusiformis	

Table 8 Distinguishing species for Sandy mud to mixed sediment with *Melinna palmata* community complex.

MIXED SEDIMENT WITH *CHAETOZONE GIBBER* COMMUNITY COMPLEX

This subtidal community complex occurs extensively in the Portmagee Channel from Reenard Point and the Derreen River in the east to the bridge at Portmagee on the north shore of the channel and west of Illaunloughan on its southern shore. It also occurs at the mouth of the Valencia River, north of Reenard Point (Figures 4a to 4d). It is recorded in depths of between 0m and 10m.

The sediment here is mixed and there are large variations in the proportion of the fractions within this complex. In general, gravel accounts for between 42.2 to 17% of the sediment within this complex, however north of Reenard Point and in the Portmagee Channel at the Gougane River and at Carriginny it accounts for less than 8%. From Carrignavegagh to the Derreen River very coarse sand and coarse sand range from 25 to 22% and 15 to 13% respectively compared to 10 to 1% and 9 to 2% respectively over the remainder of the complex. North of Reenard Point medium sand ranges from 47 to 16% and fine sand from 65 to 43% compared to less than 9% medium sand and between 20 and 7% fine sand elsewhere. In this area silt-clay is negligible (< 2%) compared to between 36 to 10% in other places.

The distinguishing fauna of this community complex includes the polychaetes *Chaetozone gibber* and *Platynereis dumerilii* and unidentified amphipods of the family Aoridae, all of which are recorded in high to moderate abundances throughout the community complex. The polychaetes *Notomastus latericeus* and *Scalibregma inflatum*, the crustaceans *Tanaopsis graciloides*, *Dexamine spinosa* and *Microdeutopus anomalus* and the bivalve *Kurtiella bidentata* are also recorded here. The polychaetes *Melinna palmata*, *Euclymene oerstedii*, *Perinereis cultrifera*, *Aonides oxycephala*, *Scalibregma celticum* and *Harmothoe imbricata*, the crustaceans *Leptochelia savignyi*, *Erichthonius* spp., (including *E. punctatus*), *Metaphoxus pectinatus* and *Apseudes talpa* are recorded in high to moderate abundances in the vicinity of the discharges of the Derreen and Gougane Rivers (Table 9).

The delicate sea pen *Virgularia mirabilis* and the uncommon actinarian *Halcampa chrysanthellum* are recorded in this community. The rare actinarian *Scolanthus callimorphus* which is only known from Kilkieran Bay in Co. Galway and one site in Dorset, England is also recorded here.

Distinguishing species of the Mixed sediment with *Chaetozone gibber* community complex	
Chaetozone gibber	*Harmothoe imbricata*
Platynereis dumerilii	*Metaphoxus pectinatus*
Aoridae indet.	*Scalibregma inflatum*
Leptochelia savignyi	*Apseudes talpa*
Melinna palmata	*Notomastus latericeus*
Euclymene oerstedii	*Tanaopsis graciloides*
Erichthonius sp.	*Dexamine spinosa*
Perinereis cultrifera	*Microdeutopus anomalus*
Scalibregma celticum	*Virgularia mirabilis*
Erichthonius punctatus	*Scolanthus callimorphus*
Aonides oxycephala	*Halcampa chrysanthellum*

Table 9 Distinguishing species for Mixed sediment with *Chaetozone gibber* community complex.

Fucus-DOMINATED INTERTIDAL REEF COMMUNITY COMPLEX

This community occurs extensively within this site. It is recorded on shores of Valencia Island from Bray Head in the southwest to Reenadrolaun Point on the north of the island; it occurs on all shores of Beginish Island. On the mainland it is recorded from Doulus Head to Lough Kay and at Laght Point in the north, from the eastern boundary of the site in Valencia River Channel to Reennagappul and on the southern shore of Portmagee Channel from east of Gougane River to Doon Point at its western extreme (Figures 4a and 4d).

This reef is recorded on sheltered to moderately exposed shores where the substrate is a mosaic of bedrock, cobble and boulders. It occurs on vertical or near vertical bedrock in a number of areas, notably in the southern part of the site from west of Foilhomurrin Bay to Doonroe Cliff, from Dunganmore Head to Bray Head, on Long Island, the north shore of Horse Island and on the mainland at Doon Point. In Doulus Bay in the northeast of the site vertical or near vertical bedrock is recorded from Doulus Head to Enagh Point and on Valencia Island east of Trabaun to Reenageeveen Point.

The species associated with this community include the brown algae *Fucus spiralis*, *F. vesiculosus*, *F. serratus*, *Pelvetia canaliculata*, *Ascophyllum nodosum*, the gastropods *Patella vulgata* and *Nucella lapillus,* and the barnacle *Semibalanus balanoides*. The epiphytic red alga *Polysiphonia lanosa* also occurs in this community (Table 10).

A variant of this community is recorded where the exposed reef occurs on bedrock, notably on the north shore of Valencia Island from Reenadrolaun Point to Fort Point and on the mainland to the north of Laght Point and at Reencaheragh at the south-eastern boundary of the site. With the exception of *Pelvetia canaliculata*, fucoid algae are replaced by the green algae *Ulva* sp. and the red alga *Osmundea pinnatifida*. The barnacle *Chthamalus* sp. occurs in place of *Semibalanus balanoides*. The echinoderm *Paracentrotus lividus* is recorded from rock pools and the lichen *Verrucaria maura* is dominant on the upper shores.

Species associated with the *Fucus*-dominated intertidal reef community complex	
Fucus spiralis	*Semibalanus balanoides*
Fucus vesiculosus	*Ulva* sp.
Fucus serratus	*Osmundea pinnatifida*
Pelvetia canaliculata	*Verrucaria maura*
Ascophyllum nodosum	*Chthamalus sp.*
Patella vulgata	*Paracentrotus lividus*
Nucella lapillus	

Table 10 Species associated with the *Fucus*-dominated intertidal reef community complex.

LAMINARIA-DOMINATED COMMUNITY

Reef dominated by kelp of the genus *Laminaria* occurs in Doulus Bay in the north of the site and at the western extreme of Portmagee Channel in the southwest of the site, with small patches occurring within the channel off Gortreagh and Carrignavegagh (Figures 4a to 4d).

The reef substrate consists of a mosaic of bedrock and boulders interspersed with patches of cobble, gravel and sand. The bedrock is vertical or near vertical on the north and west coast of Beginish Island. The reef community occurs in exposed to moderately exposed conditions in water depths of 2m to 20m.

The biota of this reef community is dominated by the kelp *Laminaria hyperborea*, other kelp species which are recorded here are *L. digitata* and *Saccharina latissima*. The associated flora consists of foliose red algae including *Dilsea carnosa* and *Delesseria sanguinea* and encrusting calcareous red algae. The brown algae *Saccorhiza polyschides*, *Desmarestia* sp. and *Dictyopteris membranacea* and the red alga *Rhodophyllis* sp. also occur.

The associated fauna consist of bryozoans, including *Membranipora* sp., *Cellepora* sp. and *Electra* sp., sponges including *Cliona celata*, *Pachymatisma johnstoni,* and *Myxilla incrustans*, cnidarians including *Actinia equina*, *Anemonia viridis*, *Urticina felina*, *Metridium senile*, *Alcyonium digitatum* and *Caryophyllia smithii*, the ascidian *Ascidiella aspersa*, and the echinoderms *Echinus esculentus*, *Asterias rubens*, *Holothuria forskali*, *Aslia lefevrei* and *Antedon bifida*. The barnacles *Balanus balanus* and *B. crenatus* are also recorded. Where coarse sediments collect between the reef substrates polychaetes of the genus *Pomatoceros*, including *P. lamarcki* and *P. triqueter*, are abundant (Table 11).

Species associated with the *Laminaria*-dominated community	
Laminaria hyperborea	*Urticina felina*
Laminaria digitata	*Metridium senile*
Saccharina latissima	*Echinus esculentus*
Saccorhiza polyschides	*Asterias rubens*
Dilsea carnosa	*Antedon bifida*
Delesseria sanguinea	*Aslia lefevrei*
Desmarestia sp.	*Holothuria forskali*
Dictyopteris membranacea	*Balanus balanus*
Rhodophyllis sp.	*Balanus crenatus*
Encrusting calcareous red algae	*Membranipora* sp.
Ascidiella aspersa	*Electra* sp.
Cliona celata	*Cellepora* sp.
Pachymatisma johnstoni	*Pomatoceros triqueter*
Myxilla incrustans	*Pomatoceros lamarcki*
Alcyonium digitatum	*Polyclinum aurantium*
Caryophyllia smithii	*Pycnoclavella aurilucens*
Actinia equina	*Morchellium argus*
Anemonia viridis	

Table 11 Species associated with the *Laminaria*-dominated community.

ECHINODERM-DOMINATED REEF COMMUNITY COMPLEX

This reef community dominated by echinoderms occurs extensively throughout Doulus Bay and Valencia Harbour and in the western extreme of Portmagee Channel off Bray Head and off Long Island and Horse Island (Figures 4a and 4d).

The reef substrate consists of a mosaic of bedrock and boulders with patches of cobble, gravel and sand occurring between rock and boulder features. The reef community occurs in exposed to moderately exposed conditions in water depths of 2m to 45m.

The community is dominated by the echinoderms *Holothuria forskali*, *Echinus esculentus*, *Marthasterias glacialis*, *Asterias rubens* and *Luidia ciliaris*. The associated fauna include the cnidarian *Cereus pedunculatus*, *Caryophyllia smithii, Cerianthus lloydii, Alcyonium digitatum* and *Corynactis viridis*, the sponges *Cliona celata, Haliclona viscosa* and *Mycale rotalis,* the polychaete *Myxicola infundibulum*, and the crustaceans *Pagurus bernhardus* and *Liocarcinus depurator*. The ascidian *Ascidiella aspersa*, the crustaceans *Jassa falcata*, *Jassa* spp., *Phtisica marina*, *Caprella* sp. and the pycnogonid *Achelia echinata* are also recorded from this community (Table 12).

In the shallower areas of this reef community (2m to 20m) the algae *Delesseria sanguinea*, *Phycodrys rubens* and *Dictyopteris membranacea* are common.

Species associated with the Echinoderm-dominated reef community complex	
Holothuria forskali	*Ascidiella aspersa*
Echinus esculentus	*Jassa* spp.
Marthasterias glacialis	*Jassa falcata*
Asterias rubens	*Phtisica marina*
Luidia ciliaris	*Caprella* sp.
Cereus pedunculatus	*Achelia echinata*
Caryophyllia smithii	*Delesseria sanguinea*
Cerianthus lloydii	*Phycodrys rubens*
Cliona celata	*Dictyopteris membranacea*
Alcyonium digitatum	*Haliclona viscosa*
Myxicola infundibulum	*Mycale rotalis*
Pagurus bernhardus	*Corynactis viridis*
Liocarcinus depurator	

Table 12 Species associated with the Echinoderm-dominated reef 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 Large shallow inlets and bays in Valencia Harbour/Portmagee Channel 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, Mudflats and sandflats not covered by seawater 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 maërl- and *Zostera*-dominated communities and the *Edwardsia delapiae* associated community, subject to natural processes.

- *Zostera*- and maërl-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, e.g. they serve as important nursery grounds for commercial and non-commercial species. This is the only known location of *Edwardsia delapiae* in the world and it is therefore considered a species very vulnerable to extinction. Its recorded locations during the BioMar and MERC surveys are used to provide information on the likely extent of this species within this site.
- 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 figures 4a to 4d. The area given below is based on spatial interpolation and therefore should be considered indicative:

- Maërl-dominated community – 59ha
- *Zostera*-dominated community – 6ha
- *Edwardsia delapiae* associated community – 2ha

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

- Every effort should be made to avoid any death to living maërl.
- Any significant anthropogenic disturbance to the quality of the maërl-dominated community (i.e. volume of live maërl, thallus structure) should be avoided.

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

- It is important to ensure the quality as well as the extent of the *Zostera*-dominated community is conserved. For example, shoot density 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.
- Within this SAC, the density of *Zostera* in 2007 was estimated to range from abundant (12 individuals m^{-2}) to occasional (2 to 5 individuals m^{-2}) on the AFOR scale (semi-quantitative abundance measure).
- Any significant anthropogenic disturbance to the quality (i.e. shoot density) of this community should be avoided.

Target 5	Conserve the high quality of the *Edwardsia delapiae* associated community, subject to natural processes.

- Every effort should be made to avoid any death to living *Edwardsia delapiae*.
- 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 sand with nematodes and polychaetes community complex; Medium to fine sand with *Nephtys cirrosa* and *Spiophanes bombyx* community complex; Coarse sediment with *Pisione remota* community complex; Sandy mud to mixed sediment with *Melinna palmata* community complex; Mixed sediment with *Chaetozone gibber* community complex; *Fucus*-dominated intertidal reef community complex; *Laminaria*-dominated community and Echinoderm-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 figures 4a to 4d.

- The estimated areas of these communities given below are based on spatial interpolation and therefore should be considered indicative:
  - Intertidal sand with nematodes and polychaetes community complex - 111ha
  - Medium to fine sand with *Nephtys cirrosa* and *Spiophanes bombyx* community complex- 294ha
  - Coarse sediment with *Pisione remota* community complex - 130ha
  - Sandy mud to mixed sediment with *Melinna palmata* community complex - 359ha
  - Mixed sediment with *Chaetozone gibber* community complex - 715ha
  - *Fucus*-dominated intertidal reef community complex - 127ha
  - *Laminaria*-dominated community - 451ha
  - Echinoderm-dominated reef community complex - 374ha

- 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 Mudflats and sandflats not covered by seawater at low tide in Valencia Harbour/Portmagee Channel SAC, which is defined by the following list of attributes and targets.**

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

- This target refers to activities or operations that propose to permanently remove habitat from a site, thereby reducing the permanent amount of habitat area. It does not refer to long or short term disturbance of the biology of a site.
- Early consultation or scoping with the Department in advance of formal application is advisable for such proposals.

Target 2	Conserve the following community types in a natural condition: Intertidal sand with nematodes and polychaetes community complex and Medium to fine sand with *Nephtys cirrosa* and *Spiophanes bombyx* community complex.

- A semi-quantitative description of the communities has been provided in Section 1.
- An interpolation of their likely distribution is provided in figures 4a to 4d.

- The estimated areas of the communities within the Mudflats and sandflats not covered by seawater at low tide habitat given below are based on spatial interpolation and therefore should be considered indicative:
    - Intertidal sand with nematodes and polychaetes community complex – 111ha
    - Medium to fine sand with *Nephtys cirrosa* and *Spiophanes bombyx* community complex – 12ha
- 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 Valencia Harbour/Portmagee Channel SAC, which is defined by the following list of attributes and targets**

Target 1	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 3.
- 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 2	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 3	Conserve the following community types in a natural condition: *Fucus*-dominated intertidal reef community complex; *Laminaria*-dominated community and Echinoderm-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 figures 4a to 4d.
- 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 steeply sloping rock, the mapped community extents will be underestimated:
    - *Fucus*-dominated intertidal reef community complex - 127ha
    - *Laminaria*-dominated community - 451ha
    - Echinoderm-dominated reef community complex - 374ha
- 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.

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Figure 1. Extent of Large shallow inlets and bays in Valencia Harbour/Portmagee SAC

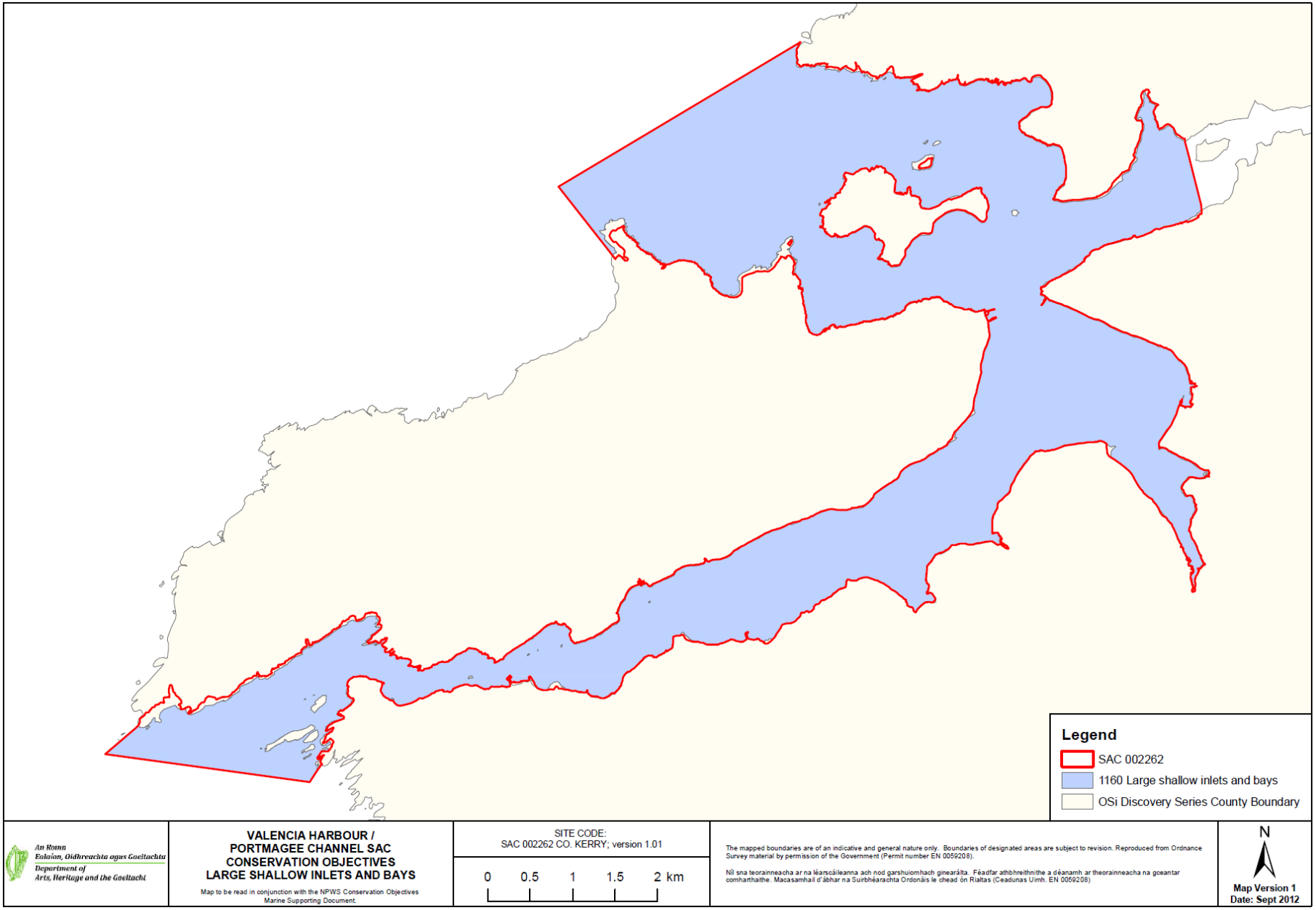

Figure 2. Extent of Mudflats and sandflats not covered by seawater at low tide in Valencia Harbour/Portmagee SAC

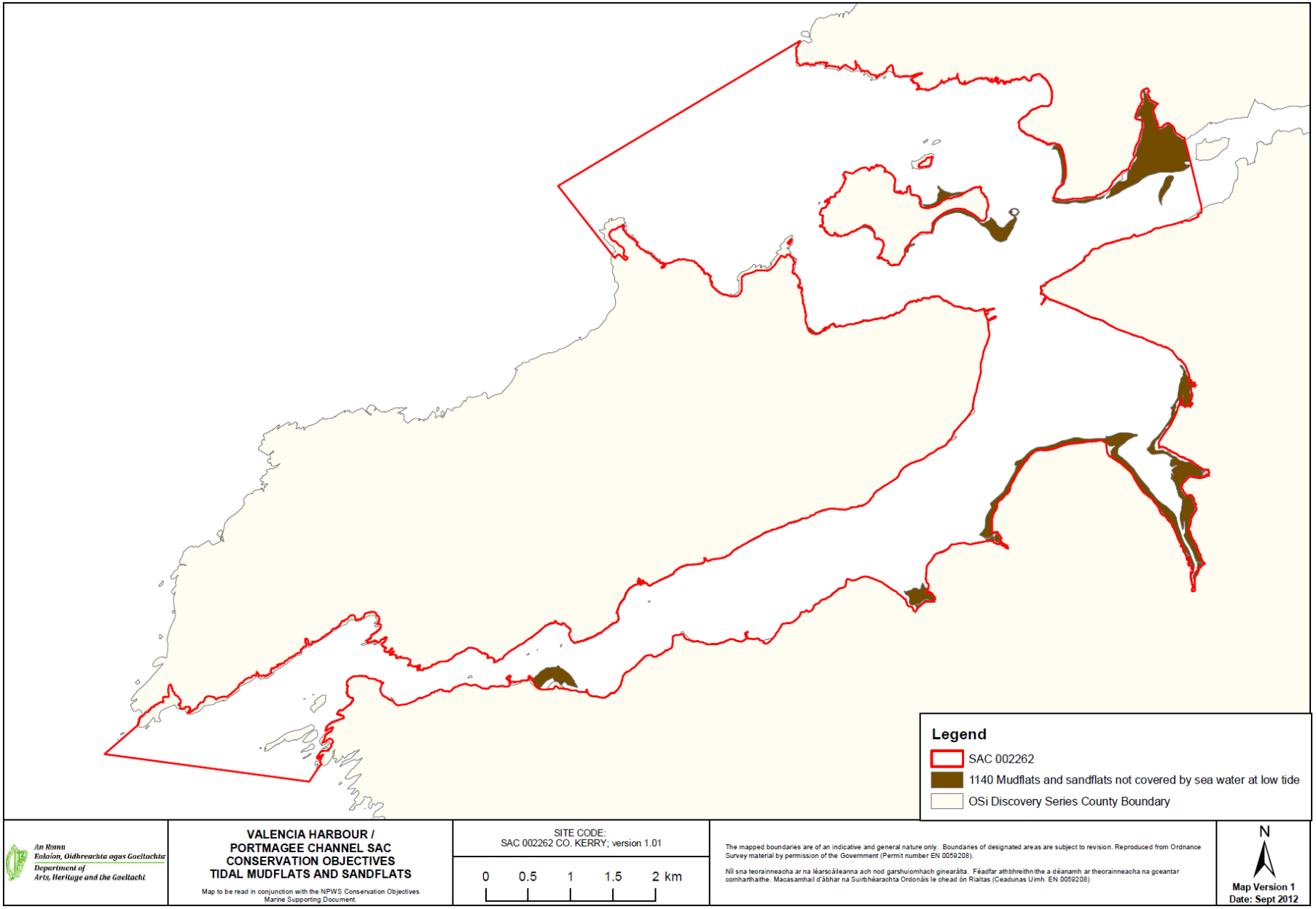

Figure 3. Extent of Reefs in Valencia Harbour/Portmagee SAC

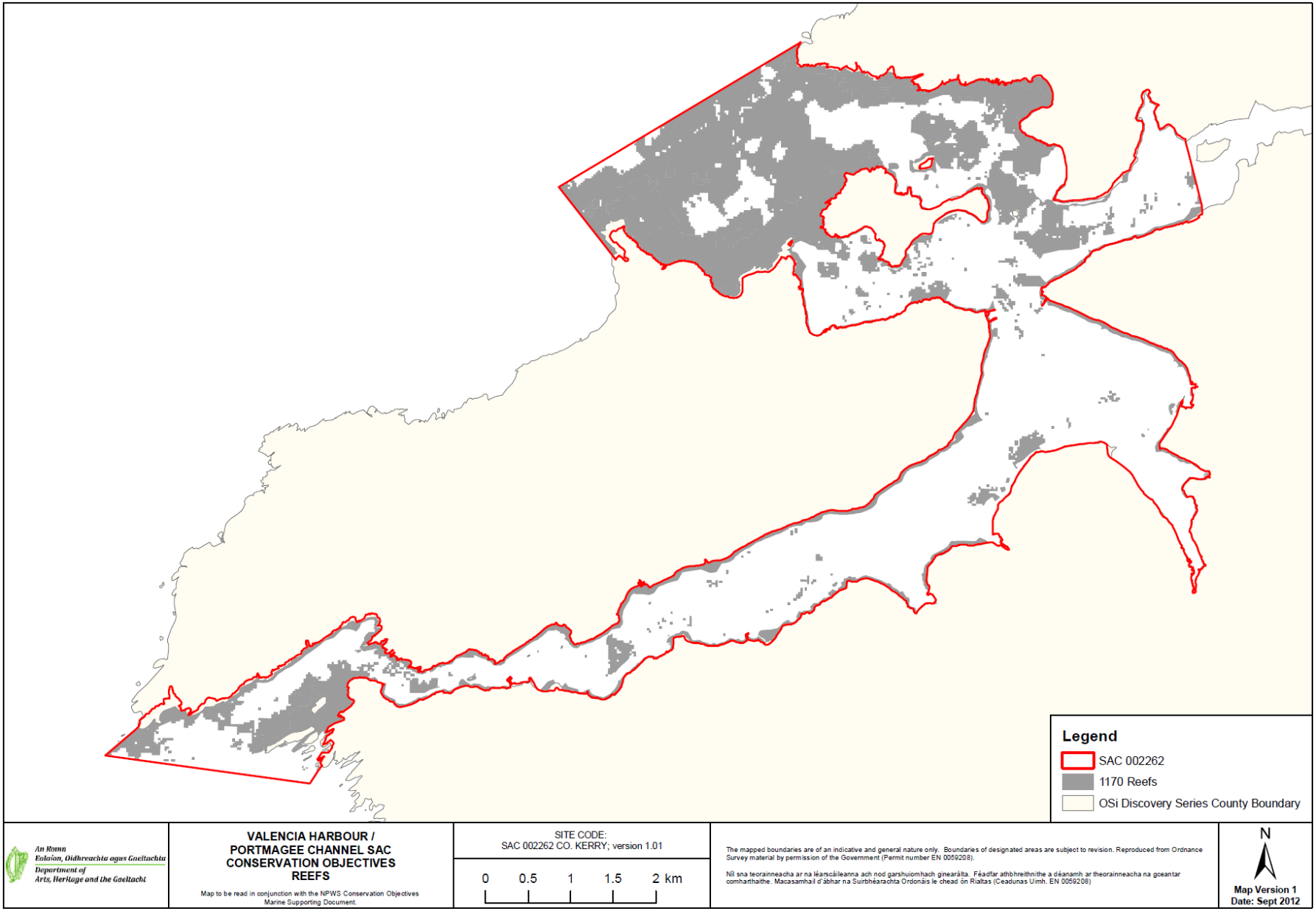

Figure 4a. Distribution of marine community types Valencia Harbour/Portmagee SAC

[boxed area corresponds to the area displayed in figure 4b]

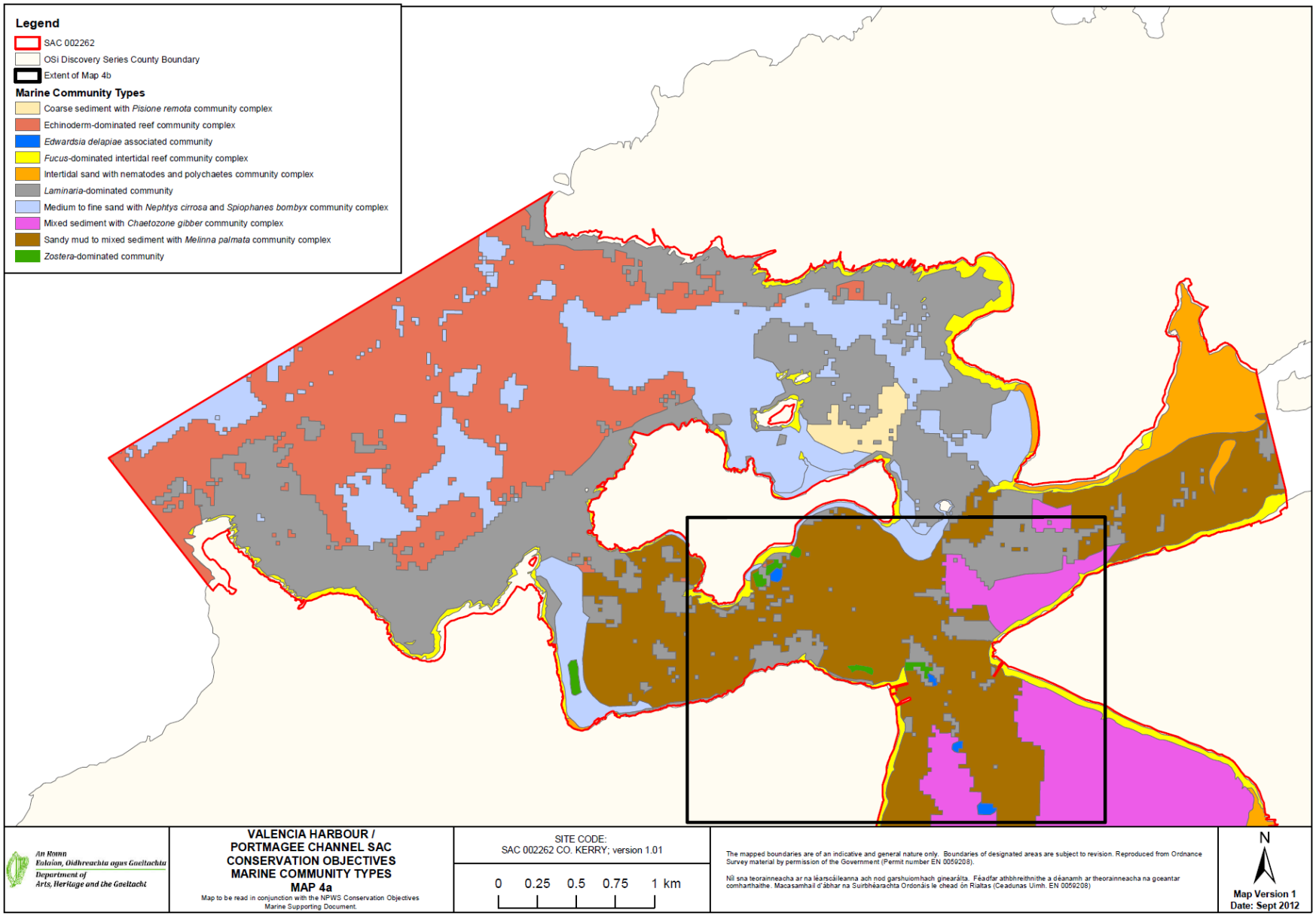

Figure 4b. Distribution of *Edwardsia delapiae* associated community in Valencia Harbour/Portmagee SAC

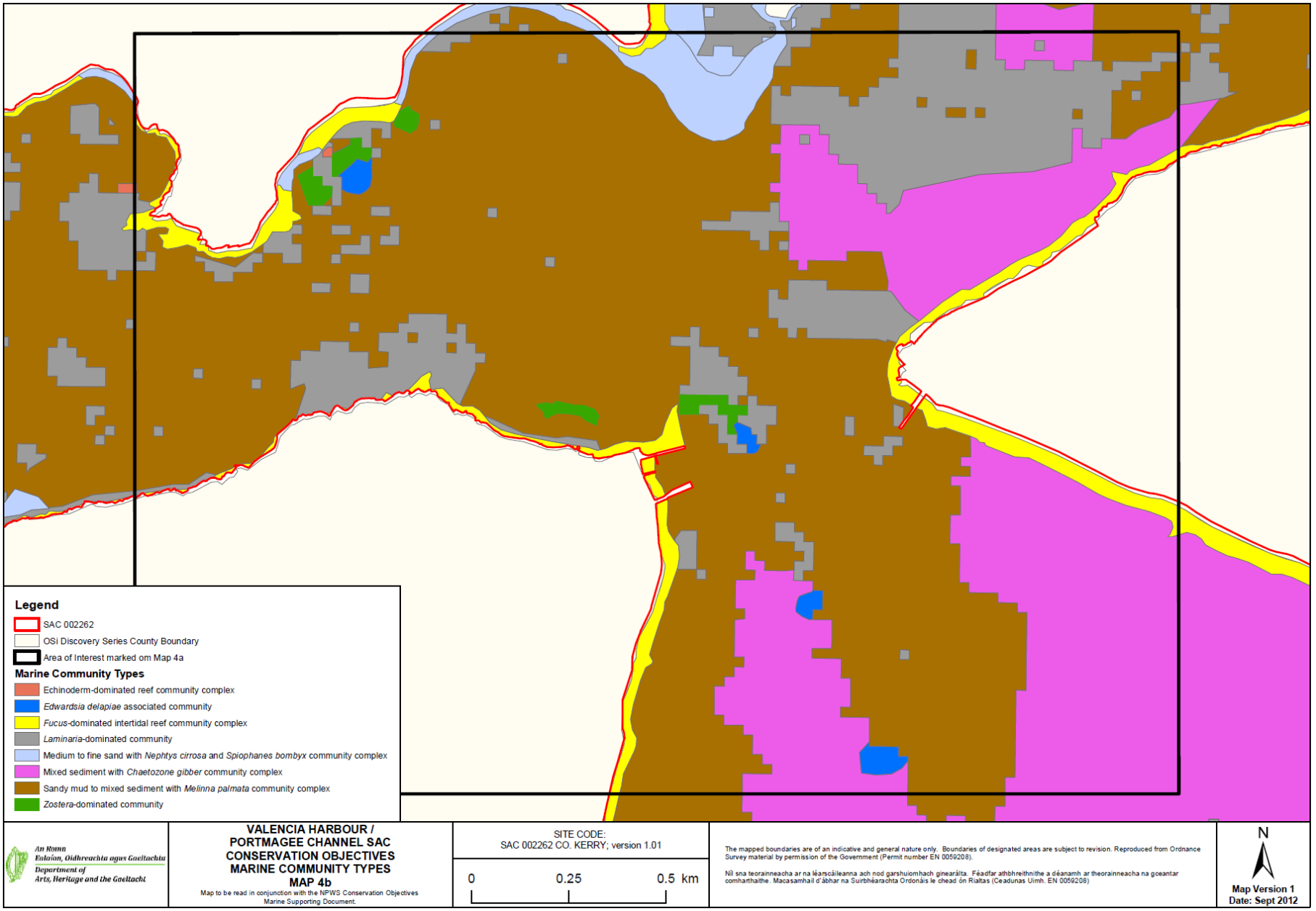

Figure 4c. Distribution of marine community types Valencia Harbour/Portmagee SAC

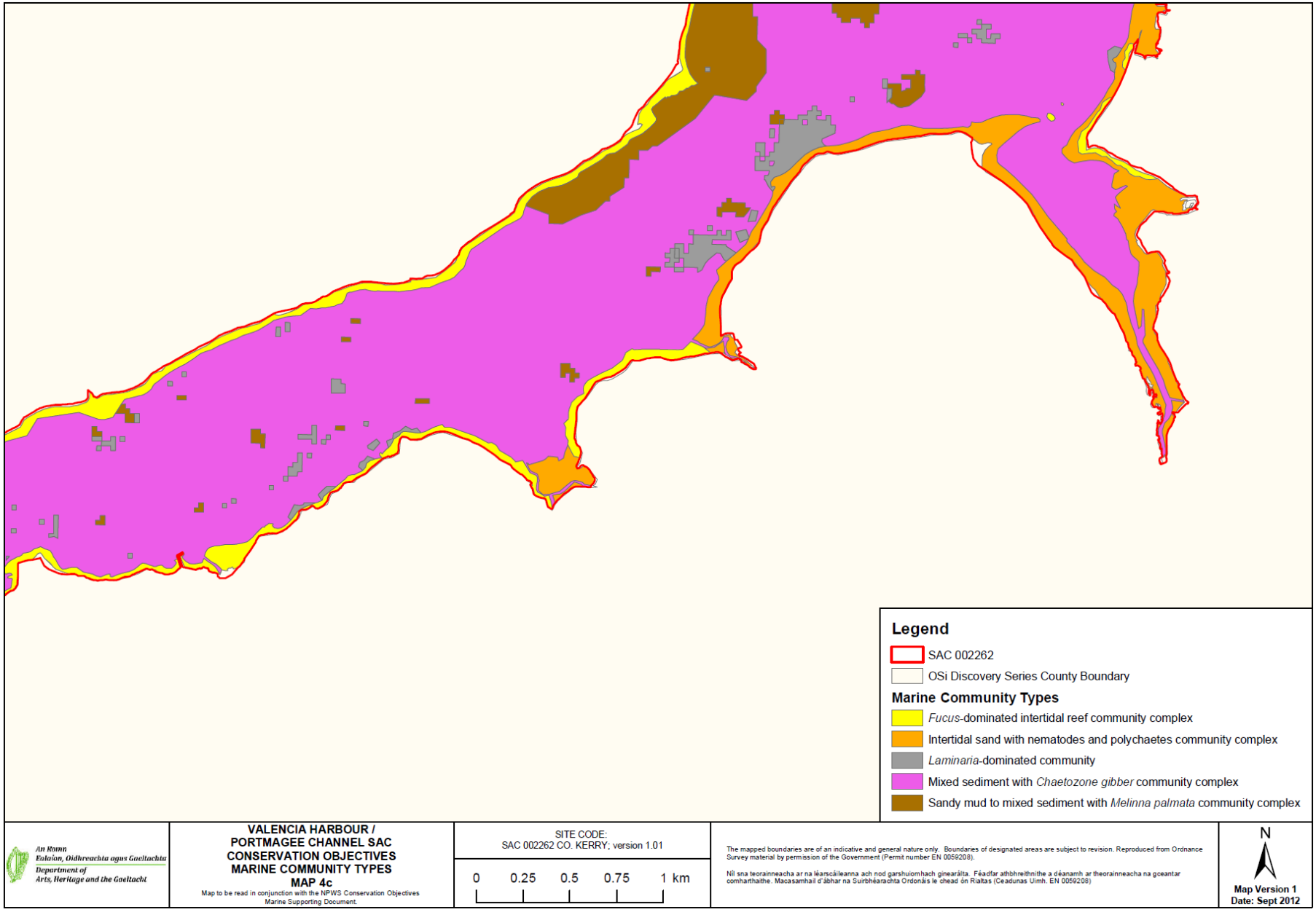

Figure 4d. Distribution of marine community types Valencia Harbour/Portmagee SAC